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PATENTS FOR INVENTIONS.

ABRIDGMENTS OF SPECIFICATIONS.

CLASS 62,

HARNESS AND SADDLERY.

PERIOD—A.D. 1855-1866.



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EXPLANATORY NOTE.

The contents of this Abridgment Class may be seen from its Subject-matter Index. For further information as to the classification of the subject-matter of inventions, reference should be made to the *Abridgment-Class and Index Key*, published at the Patent Office, 25, Southampton Buildings, Chancery Lane, W.C., price 1s., postage 6d.

It should be borne in mind that the abridgments are merely intended to serve as guides to the Specifications, which must themselves be consulted for the details of any particular invention. Printed Specifications, price 8d., may be purchased at the Patent Office, or ordered by post, no additional charge being made for postage.

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HARNESS AND SADDLERY.

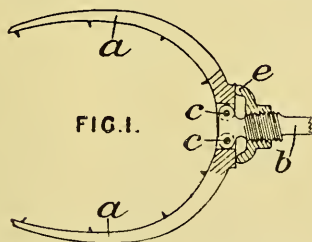
Patents have been granted in all cases, unless otherwise stated. Drawings accompany the Specification where the abridgment is illustrated and also where the words *Drawings to Specification* follow the date.

A.D. 1855.

- 130. Surgey, J. B.** Jan. 18. [*Provisional protection only.*]

Sun and weather screens.—A carriage horse may be sheltered in wet or hot weather by a movable canopy supported at one end on the carriage, and kept clear of the animal at the other end by stiffening-devices forming part of the canopy itself, or attached to the shafts or to the harness.

- 294. Newton, A. V.,** [a communication]. Feb. 7.



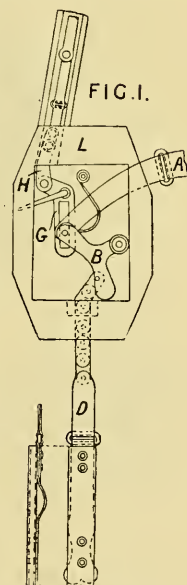
Spurs.—The clasp of the spur is made adjustable to fit heels of various sizes. The arms *a* forming the clasp are pivoted at *c* to the end of the stem *b*. By screwing up a nut *e* the arms are caused to grasp the heel forcibly. Points on the inside of the arms enter the leather of the heel. In a modification, the nut is conical and acts as a wedge between projections on the arms.

- 485. Dawson, J.** March 5. [*Provisional protection only.*]

Saddles.—The saddle is adjusted to fit any horse by means of metallic plates on the saddle-tree expanded or contracted by screws.

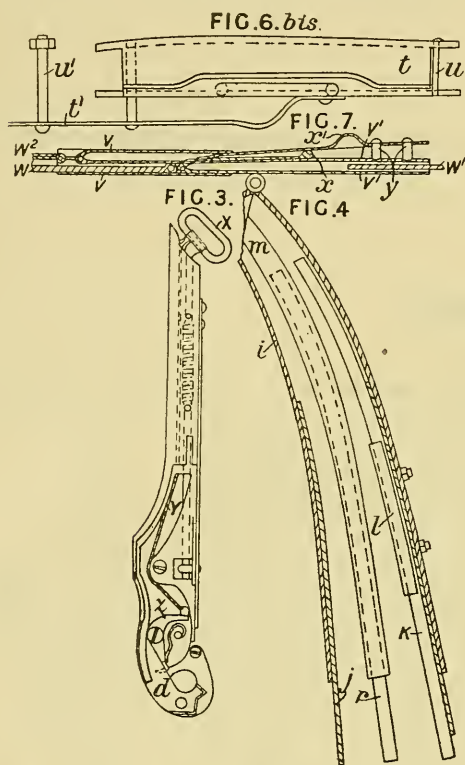
- 539. Smith, W.,** [a communication]. March 9.

Runaway horses, releasing; fastening.—The coachman, by jerking a safety rein provided in addition to the driving-reins, releases the fastening of the girth and hames, so that all the harness with the exception of the collars and bridles will fall on to the pole of the carriage, leaving the runaway horses free. The coachman can then guide the carriage by the pole until it comes to rest. The mechanism for releasing the fastenings is contained in a box-like recess in one side of the saddle, shown in Fig. 1 at *L*. The safety rein *A* is attached to an arm connected to a bell-crank lever *B* within the recess. When the rein is jerked, the lever *B*, by acting on a strap *D*, releases a spring-hook clasp which fastens the girth. At the same time



the bell-crank lever *B* actuates another lever *G*, which, by pulling upon a strap or chain *H*, withdraws a spring bolt and causes the bridle hook to open and release the bearing-reins. The release of the hames is effected by a strap attached to the saddle, which strap, when the saddle is released, pulls upon a ring on the hames shown in Fig. 3 at *X*. The ring *X*, by means of a wire *Y* in a channel in the hames, releases a spring hook *Z* and unfastens the part *d* at the lower end of the hames, which are thus freed. A further improvement relates to a buckle substitute to be used as a fastening for traces, which will allow of a fallen horse being quickly released. The trace passes into a box *t*, Fig. 6^{bis}, under which is fixed a

spring t^1 furnished with pegs placed at the same distance as the holes in the trace. Screws u, u^1 serve to fix the trace at the required length. The collar, Fig. 4, consists of a part j fitting into a part i and united to it by screws passing through holes in an iron rod K set in a groove l . The rod of the collar is composed of a sheath m and rod r .



The driving-reins are composed of two parts, W , Fig. 7, fastened to the coach box and passing into a sort of sheath V , W^1 attached to the bridle. On drawing the rein W^2 , the sheath V is disengaged from the sheath V^1 by dragging the head of the bolt x from a cavity in the spring x^1 and thereby raising pegs y .

714. Neale, E. V., and Dawson, T.
March 30.

Whips.—Whips and similar articles are fitted with ornamented hollow glass handles in the form of tubes, hooks, or cups, &c. with knobs, caps, and ferrules of ivory, horn, bone, wood, metal, or other suitable material. One variety of handle consists of a straight glass tube let into a knob at one end and at the other end into a ferrule into which the stick is fitted. A metal rod fixed in the knob passes through the glass tube and screws into the stick. A handle may consist of alternate pieces of glass tubing and some other material united by means of a central rod. A glass cup open at both ends, or a bent tubular handle, is fitted to the stick at one end, and is closed at the other end by a plate of glass. A curved flaring handle is secured to

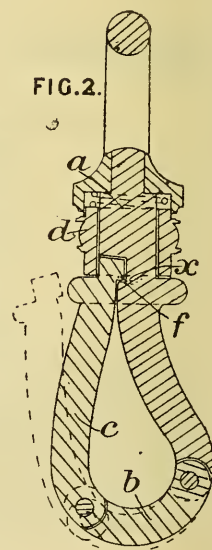
the stick at its smaller end, and is closed by a plate of glass at its other end. A handle may be of a retort shape. A horn or other handle, or the stick of an umbrella, may be ornamented by inlaying pieces of glass kept in place by metal rings. The inner surfaces of glass handles are painted, or handles are made of coloured glass; or coloured or other drawings or designs or photographs or almanacs &c. are gummed on the interior surfaces of the handles. To prevent breakage, the handles are filled with sand, or with a hard cement, the ends being sealed by washers. To prevent longitudinal pressure, a zinc tube may pass through the glass tube and project at each end. The centre rod may be soldered to the zinc tube. Instead of centre rods, tubes may be used.

875. Johnson, J. H., [a communication].
April 19.

Materials; combs; whips; whip-sockets.—Combs, whips, and whip-sockets are moulded from india-rubber or gutta-percha or compounds of them, and are hardened by steam-heating or vulcanization, while in the mould or subsequently. Metal tubes or wire coated with rubber &c. may be used in making harness.

1058. Hunt, C. J. May 10.

Fastening.—A hook for tugs &c. consists of three parts a, b, c hinged together by pin joints. A band d , which turns freely on the stem a , has a notch through which the end of the part c can pass. When the part c is in position, it is secured by the band d , the notch being turned away from the point of the hook. The band d is held firm by a projection x engaging a notch b on the fixed collar of the stem, against which it is pressed by a spring.



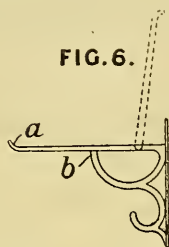
1277. Gedge, J., [Vauconsant, F. V.].
June 5. [Provisional protection only.]

Currycombs.—The usual hammer or claw head of the comb is dispensed with, the blade combs being kept in position by a sustaining-band incasing their ends and riveted to the back plate.

1354. Cottam, G. June 13.

Brackets for.—The upper part *a* of the harness bracket shown in Fig. 6 is hinged. The part *b* acts as a support for *a* as well as a hook for the harness.

FIG. 6.

**1404. Herts, D. B.,** [Yellott, G., and Hunt, S.] June 20. [Provisional protection only.]

Runaway horses, releasing; fastening.—To enable a person to release an unmanageable horse by pulling a cord which removes all the harness except the collar, bridle, and reins, the hames are held together at the top by a spring bolt passing through a rule joint, and the saddle-tree is made in two parts connected by a bevelled pin. On pulling the cord, which is connected to the spring bolt and the bevelled pin, both the harness and saddle-tree come apart and the horse is set free. The terrets drop out when the sections of the saddle-tree are parted.

1488. Heaps, W. June 29. [Provisional protection only.]

Backbands.—When two horses are used in harrowing land, one backband only is employed, passing over the back of each horse and under a pulley on the middle shaft.

1555. Bielefeld, C. F. July 11.

Saddles.—Saddle-trees are moulded from a mixture of tannogelatine, sulphur balsam, gum thus, gutta-percha, and a suitable solvent, preferably Venice turpentine. India-rubber or solutions thereof may also be used as ingredients. Sheets of canvas and cork may be enclosed in the plastic composition.

1599. Pidding, W. July 17.

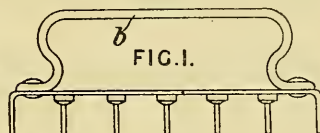
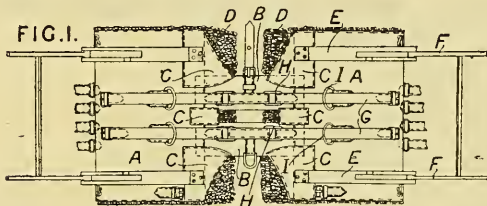
Horse-boots.—The sole of a boot for a horse or other animal is made of india-rubber or of an india-rubber and gutta-percha composition, and has internal cells filled with gas or liquids, and an india-rubber upper embracing the hoof is cemented to the sole. A modified shoe is made in two parts, one of which has depressions, and is held stretched with the depressions filled with gas or liquid while a sheet of india-rubber forming the second part of the shoe is cemented to it, so that the finished shoe has a corrugated surface. The surface of a shoe may be protected

by a sheet of india-rubber having perforations in which steel studs are fitted. An india-rubber shoe may be fitted with spiral or helical springs, or the air or liquid cells may be replaced by angular or other shaped wood, glass, metal, papier mâché, &c. studs embedded in the india-rubber.

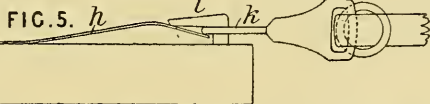
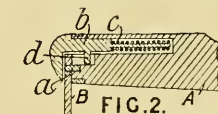
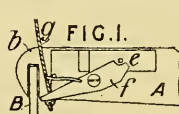
1658. Tildesley, J. July 21.

Currycombs.—

A fixed or drop handle *b*, of metal, is secured to the back of the comb at right-angles to, instead of parallel with, the rows of teeth.

**1714. Woods, G.** July 27.

Saddles.—A pack-saddle is formed by two square pieces of leather *A*, *A* connected by two pieces of webbing *B* and furnished with leather strengthening-pieces *C* and girth straps. The parts *A* are lined with fibre mats *D*. Two pieces of wood *E*, *E* are fixed to each side piece *A* to keep the load away from the side of the animal, and iron bars *F* are hinged to the wood pieces *E* in such a manner that they can be turned down into recesses in the pieces *E* or turned outwards to support the load. Straps *G* for securing the load are attached to rings *H* sewn to the webbings *B*, and are passed through rings *I*.

1803. Webster, A., [Webster, H., partly.] Aug. 9.

Runaway &c. horses, releasing; fastening.—To release the trace *B*, Figs. 1 and 2, from the whipple-tree *A* when the horse is running away or in other circumstances, the cord *g*, Fig. 1, is pulled, so that the spring catch *f* is removed from the stop *e* on a sliding bolt *b*, which is then shot over

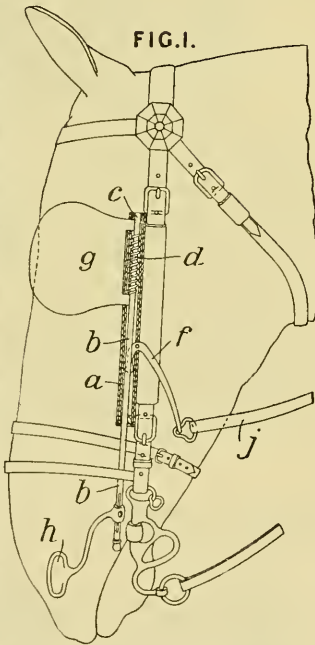
by the spring *c*, Fig. 2, and the lug *d* casts the trace *B* from the pin or holder *a*. To allow of the breeching being released, "the inner side of each "of the thills" may be fitted with a spring *h*, Fig. 5, and a hook *i* arranged as shown, so that, when the horse rushes forwards, it detaches the link *k* on the trace from the hook *i*, the spring *h* giving way so that the link may pass.

1852. Johnson, J. H., [*Sala, —*]. Aug. 15.
[Provisional protection only.]

Bridles.—Relates to an improved construction of reins, more particularly riding-reins. A thin steel bar extends from the bit to a distance along each rein, leaving the reins flexible as ordinarily. These reins may be used both by pulling and pushing, and the animal may be prevented from throwing back its head by nipping its neck between the bars.

2153. Guilbert, A. E., and Guillemère, C. L. Sept. 27.

Bridles; stop-ping and controlling runaway and restive animals.—Relates to a device for controlling restive horses by closing their eyes and nostrils. Rods *b*, passing through bearings *c* in metal casings *a* fixed to the side strap at each side of the animal's head, are provided with torsional springs *d* and are rotated by levers *f* when the straps *j* are pulled. The blinkers *g* and the nostril-compressing plates *h* are thus brought into action. The strap *j* may pass over the forehead of the horse, the lever *f* being suitably placed. The bit may be in one with the casings *a*. The blinkers *g*, may consist of a wire web for closing the animal's eyes. The parts may be made separate from each other.

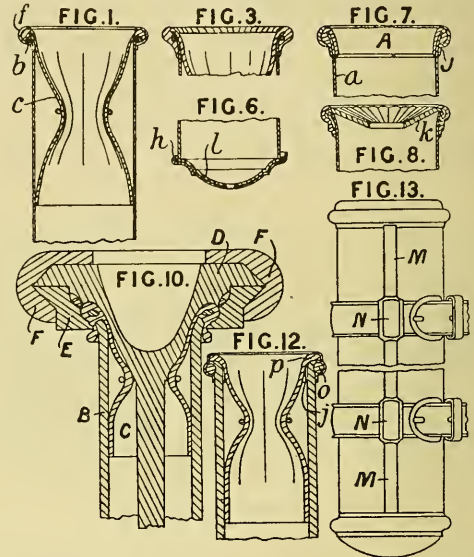


2228. Hill, R. H. Oct. 5. [*Provisional protection only.*]



Backbands.—To facilitate the release of a fallen horse, the backband is made in three separate pieces connected on either side of the saddle by a screw rosette as shown.

2288. Cockings, J. S., and Potts, F.
Oct. 13.

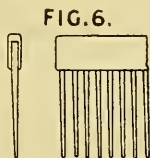


Whip-sockets.—In making metal whip-sockets with internal contractile sleeves *c*, Fig. 1, of gutta-percha or the like, the sleeve is secured at the top by making it with a thickened edge, moulding the edge over a ring *b* soldered to the metal socket, covering it with a sheet-metal ring *f*, and then closing the ring *f* inwards below the ring *b* by spinning in a lathe. The ring *f* may be dispensed with, the gutta-percha being moulded over the ring *b* as shown in Fig. 3. In a modification shown in Fig. 7, a gutta-percha ring *A* is secured by a ring *J* placed over and soldered to the socket *a* before the insertion of the ring *A* and afterwards closed inwards over the top of the ring *A*. The bottom of the socket may be closed by a metal bottom headed over a ring *h*, Fig. 6, soldered to the bottom of the socket. The bottom may have a gutta-percha lining *l*. A conical rubber ring *k*, Fig. 8, may be secured in the mouth of the socket by moulding it over the edge of the socket, tying it, and finishing it off with a metal, ivory, or other suitable mount, or a moulded rim of gutta-percha, or a strip of leather may be stitched round it. To secure a gutta-percha mouthpiece to a leather whip-socket *B*, Fig. 10, the leather is grooved round the outside near the top edge, a number of holes are punched in the groove, a gutta-percha mouthpiece *C* with a thick top edge is placed, while still warm, in the socket, and the edge of the gutta-percha is then squeezed by dies *D*, *E* around the edge of and through the holes in the socket *B*. The dies *E* are made in three segments and are tightened up by a clamp *F*. In another method of attachment, a metal ring *o*,

Fig. 12, is placed in a groove in the leather, and a metal cap *p* is spun over the ring *o* and over the edge of the gutta-percha, a strengthening-ring *j* being placed inside. A metal bottom for the socket may be secured in a similar manner. The edges of the leather socket may be united by a spiked plate *M*, Fig. 13, formed with loops *N* for straps. A trade mark or label is attached by means of projections on the label passed through holes in the leather or tin of the socket and bent down on the other side.

2332. Harding, T. R. Oct. 17.

Combs.—Combs for the human or other hair are constructed with round pins or teeth inserted in a row of holes drilled in the back of the comb as shown in Fig. 6, lateral pressure being applied to the back of the comb to fix the pins. When flattened teeth or pins are employed, a strip of indented metal is folded laterally to form the back of the comb, and the teeth are inserted and soldered in the recesses presented. According to the Provisional Specification, the combs may be constructed with cast-steel teeth hardened and tempered.



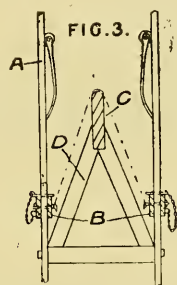
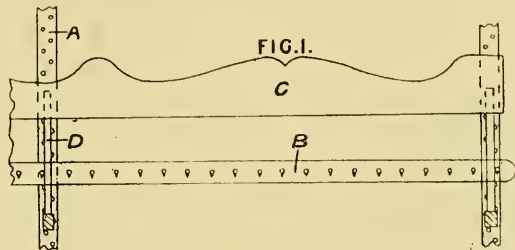
2480. Guillemot, M. Nov. 5. [Provisional protection only.]

Bridles; bits; stopping runaway animals.—For stopping a runaway horse, the nostrils are compressed by "stoppers" attached to hinged spring pieces on the bit. The ends of the spring pieces opposite the stoppers are provided with rings, situated under the lower jaw, through which a rein passes for actuating the apparatus. The mechanism can be concealed by a small cover at each side.

2553. Wilkinson, J., and Wilkinson, J. Nov. 13.

Saddle cloths are made by stretching sheets of felted or other fabrics over formers *C*, Fig. 1. The former, which is made up of repetitions of the profile of a saddle cloth, is supported on trestles *D* in a frame *A*, and the fabric is placed

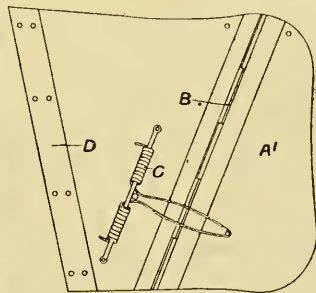
upon it as shown by the dotted lines in Fig. 3, and is secured by hooks in the bars *B*, which are moved so as to stretch the fabric. As it dries it takes permanently the shape of the former *C*.



2615. Fontaine-Moreau, P. A., Comte de, [a communication]. Nov. 20.

Bridles; controlling runaway and restive animals.—To prevent horses from running away,

blinkers are constructed of metal flaps, provided with hinges *B* acted upon by springs *C*, the pieces *D* being riveted to the bridle. By pulling a strap or cord attached to the movable parts *A*¹, the view of the animal is cut off.



A.D. 1856.

- 2. Swift, F.** Jan. 1. *Drawings to Specification.*

Traces.—The Provisional Specification states that, in order to provide elastic connection between the traces and the vehicle, the ends of the traces are formed partly of india-rubber.

- 14. Haines, F.** Jan. 3.

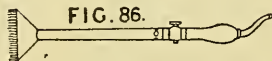
Materials; knee-caps; collars, neck; saddles.—Cork is used instead of leather for knee-caps, and also for stuffing horse collars. It is also used for saddle-trees in place of wood.

- 49. Thérèse, L. A.** Jan. 5. [*Provisional protection only.*]

Saddles.—Saddle bows and pads are formed of stout leather bent into the required shape.

- 193. Pettit, G. B., and Smith, H. F.** Jan. 24.

Singeing-apparatus.—Consists of a tube having a handle at one end and a flat burner at the other, as shown. Holes are provided near the handle to admit air for mixing with the gas, which is supplied by a flexible tube.



- 417. Gedge, J.,** [*Loubatieres, F. B.*] Feb. 19. [*Provisional protection only.*]

Currycombs.—Currycombs are made of leather with wire teeth screwed in. The teeth may be unscrewed to renew the scratching-surface from time to time.

- 501. Jennings, W. H.** Feb. 27. [*Provisional protection only.*]

Lassos.—The rings are cast in iron moulds instead of sand moulds, to reduce or dispense with the labour of finishing.

- 757. Powell, R.** March 29. [*Provisional protection only.*]

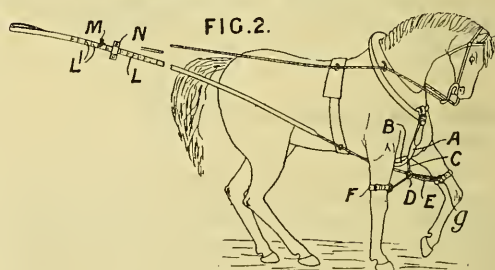
Clothing for animals; ventilation.—Ventilation holes are punched in the material at places where perspiration is likely to accumulate. The holes

are protected by stitching them round or by brass or other metal eyelets. To keep out wet, they are covered over by a flap secured at one edge.

- 855. Gedge, J.,** [*Sejac, —*]. [*Provisional protection only.*] April 9.

Materials.—Saddles, harness, and other leather articles are manufactured from old leather which is purified and rendered pliable by application of a preparation the chief constituents of which are quick lime and albumen.

- 995. Fraétaniel, I. D.** April 25.



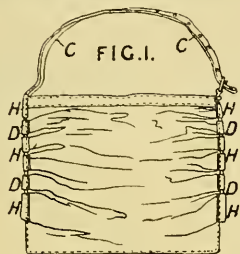
Stopping and controlling runaway and restive animals.—To prevent a horse from becoming unruly or from running away when left alone, its fore legs are brought together by pulling a rein E attached to a garter F on one leg and passing through the ring g of a similar garter on the other leg. The rein also passes through a ring D secured to a rubber spring C, the upper end of which is fixed in a socket A formed on the martingale B. The end of the rein is provided with a scale L to show the degree of the tension, and a hook M fitting into the holes L¹ keeps the rein at any desired length. A guide serves to keep the rein within reach.

- 1302. Dieudonné, L. A.,** [a communication]. June 2. [*Provisional protection only.*]

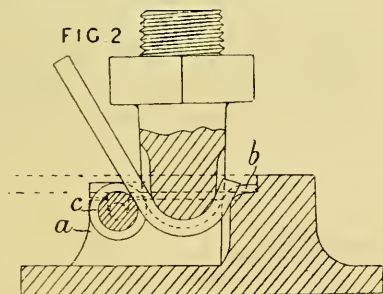
Nosebags.—To avoid loss of fodder, the suspending-strap of an ordinary nosebag is provided with an additional strap passing round the horse's head and having a ring at each side. The two ends of a rope fixed to a hook on the saddle, pass through the rings and are attached to the sides of the bag. The arrangement is such that when the animal lowers his head the bag is raised, and vice versa.

1434. Berenger, R. L. de. June 18.

Nosebags.—To allow a nosebag to accommodate itself to the mouth of the animal at all levels of the food contained in the bag, elastic bands D passing through the loops H are attached to the bag by hooks, sewing, &c. In a modification, the head strap C is secured to box springs at the top of the nosebag, or the box springs may take the place of ordinary rosettes on the bridle.

**1612. Bayer, L.** July 8. [Provisional protection only.]

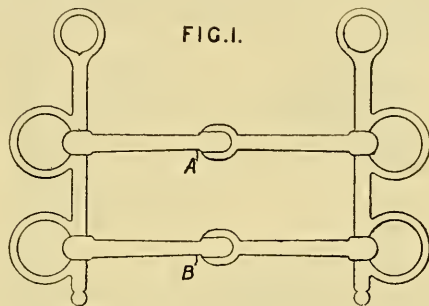
Stuffing - materials.—Stuffing for saddles and other articles is composed of fibre taken from the plantain tree (*musa paradisiaca*), and submitted to the ordinary processes of dyeing, curling, or carding, &c.

1638. Harrington, R. July 11.

Whips.—Relates to apparatus for bending iron or other metal tubes into handles for whips and other articles. An upper and lower die are used, as in Fig. 2; the lower die consists of two parallel cheeks a, one end of the recess between them being provided with a fluted shelf b to receive the end of the tube, the other end being fitted with a grooved antifriction roller c. The upper die is grooved, and corresponds in shape to the inner side of the bend to be produced. In finishing the handles by japanning, they are sometimes first covered with paper to render the japan less liable to crack, and to give smoother surface.

1670. Turner, H. July 16.

Straps and bands.—A hide is cut into a continuous length as described in Specification No. 1735, A.D. 1854, is tanned or otherwise prepared, and is converted into straps or bands for harness &c.

1768. Byford, T. July 25.

Bits.—A bit for giving the rider increased power over a horse, has two jointed bars or mouthpieces A, B. Rings are attached to the side pieces at the ends of each bar, so that a separate rein may be used for each. The ordinary rein is attached to the upper rings, and the lower bar may be caused to press upon the under jaw of the horse by pulling the rein in connection with it.

1818. Tolhausen, A., [Mangin, L. A.]. Aug. 1. Drawings to Specification.

Whips.—A folding umbrella is formed with a hollow handle made in sections and adapted to receive a whip &c. for stiffening it.

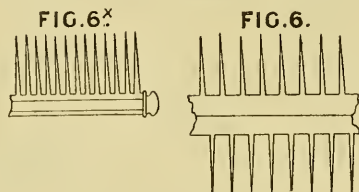
1856. Evans, T. Aug. 6.

Traces; bridles and halters; backbands; collars, neck; pole chains; fastening.—The traces and other parts of harness are made of wire rope or cord consisting of strands of iron, copper, brass, or zinc wire plaited upon a core of hemp, india-rubber, flax, or coco-nut fibre. To increase the flexibility, the rope may be made in short lengths or links consisting of parallel wires with their ends turned over and soldered together, the links being connected by loops, rings, or short chains. The rope or links may be protected against the weather by a coating of a mixture of tallow, pitch, or tar, and linseed oil, or of india-rubber or varnish, or may be electroplated with silver or gold. The ends of the wire rope are fitted with loops or eyes secured by wedges &c., for attachment to other parts of the harness or carriage. Bridles and halters, hames, backbands, and pole attachments are made of similar rope or chain.

2093. Herring, F. M. Sept. 8.

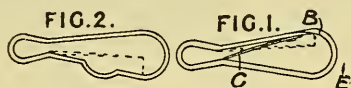
Combs.—Magnetic combs are made by cutting a steel plate into the shape shown in Fig. 6, and then folding in into the shape shown in Fig. 6*.

A bar magnet is enclosed in the back part of the comb, or the comb is afterwards hardened and magnetized. In some cases, the comb is cut



directly from a steel plate, and a bent plate, or two flat plates, are attached to the uncut edge to form the back.

2225. Taylor, J. G. Sept. 23.



Dog chains; fastening.—Fig. 1 shows a hook B made of two pieces of metal; it is kept closed by the spring C. Fig. 2 shows a spring hook made of one piece of metal. According to the Provisional Specification, such hooks may be used for coupling and fastening dogs and other animals and for harness.

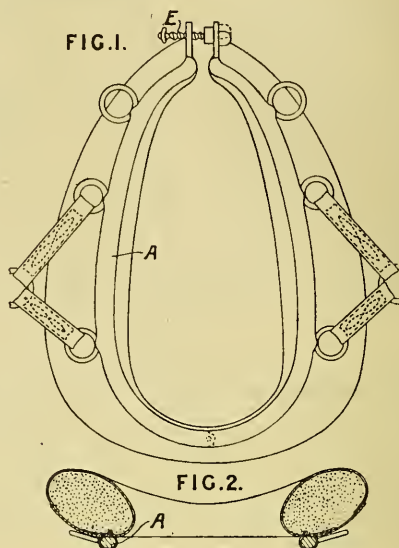
2246. Silvy, H. J. M. E., and Plagniol, A. A. H. Sept. 25. [Provisional protection only.]

Runaway horses, releasing; saddles.—Relates to an arrangement which permits the driver to liberate the horses from the carriage when desired. In the case of a two-horse carriage with a pole, a flat piece of metal attached to the fore end of the traces fits into, and is secured by a bolt in, a forked piece fixed to the saddle. This bolt may be withdrawn by the driver by means of a cord, the traces being thereby freed. The horses will then advance and pressing against a spring cap will push it off the end of the pole and thus liberate themselves from the carriage. For shaft horses, the forked piece on the saddle engages with a flat piece of metal fixed to the inner side of the shaft.

2503. Holden, H. A. Oct. 24. Drawings to Specification.

Terrets; rein-holders; fastening.—Terrets, rein hooks, cock-eyes, pole crabs, breeching staples, and other metallic parts of harness or carriage furniture are coated with plain or coloured glass or enamel. The coating may be effected by the process described in Specification No. 8080, A.D. 1839, or No. 12,437, A.D. 1849.

2568. Parbery, J. Nov. 1.

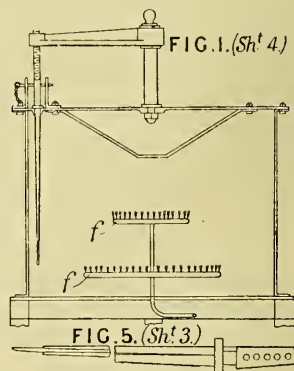


Collars, neck.—The hames are arranged to form the basis or groundwork on which the collar is built. Fig. 2 shows, in section, the hames A with the collar attached. The hames are hinged together at their lower ends, as shown in Fig. 1, and their upper ends are secured together by a screw E or by a leather, metal, or india-rubber strap. The hames may be made of solid iron or tubular, or partly of iron and partly of wood.

2578. Middleton, S. Nov. 3.

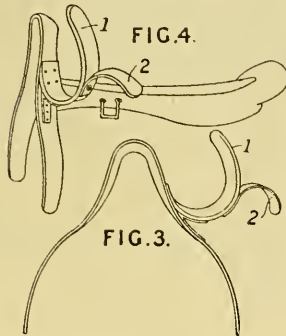
Whip-sockets;

whips.—Seamless handles and sockets for whips are formed of leather made from the skins of the tails, legs, and other parts of animals. The skin is cleaned and tanned, and stretched on a hollow expansible mandrel shown in Fig. 5 (Sheet 3); the mandrel is then forced through a hole in a press shown in Fig. 1 (Sheet 4), and the skins are dried by gas jets f. Several mandrels thus covered are treated in a currying-machine. The articles are finally japanned &c. and fitted with metal mounts.



2698. Greaves, J., [Adams, H.]. Nov. 14.

Saddles.—In ladies' saddles, the near-side horn 1 is secured near the front and at some distance below the head of the saddle-tree, and the leaping-horn 2 is fixed to it. The saddle-tree is similar in form to that used for men's saddles.

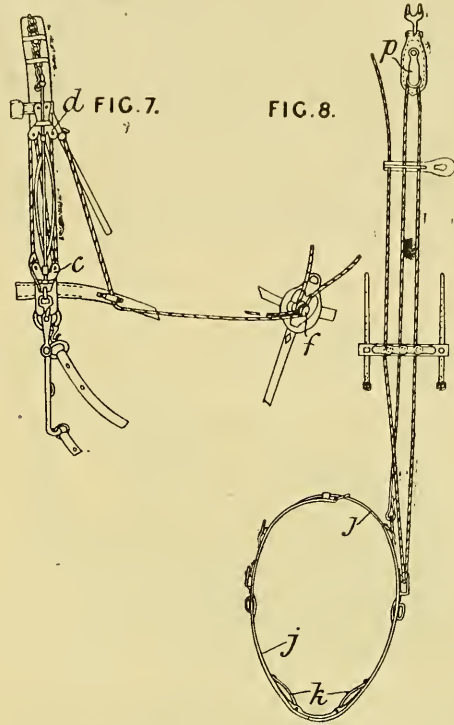


2846.

2846. Monnier, N. Dec. 1.

Stopping and controlling runaway and restive animals; bridles; bits; breeching.—A runaway or restive horse is controlled by an arrangement of cords and pulleys adapted to pull the bit further into his mouth and to tighten the crupper, and in some cases to tighten the martingale and to act on a noseband so as to compress his nostrils. Fig. 7 shows an arrangement as applied to a saddle horse. By means of cords passing round pulleys *c* attached to the bit, and round pulleys *d* on the headstall, the rider can pull the bit upwards. The cords also pass round a roller *f* on the crupper strap. A similar arrangement is employed for draught horses, additional cords being connected with the martingale. Fig. 8 shows an arrangement in which the noseband *j* is fitted with springs *k* which compress the nostrils when the cords shown are tightened by pulling on the safety rein. The cords also pass round a pulley *p* connected with the crupper.

(For Figures see next column.)



2875. Bayer, L. Dec. 4. [Provisional protection only.]

Stuffing-materials.—Stuffing for saddles and other articles is composed of fibre taken from the plantain tree (*musa paradisiaca*), and submitted to the ordinary processes of dyeing, curling, or carding, &c.

A.D. 1857.

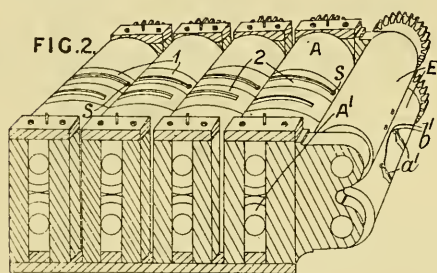
344. Newton, T., [partly a communication]. Feb. 6. [Provisional protection only.]

Saddles; hobbles; nosebags; saddle-bags; saddle cloths; stirrups.—To render the saddles of stockmen and foraging-parties convenient for transport, the panels are made removable and are attached to the saddle-tree by pegs and sockets with a spring in the panel at the gullet; the flaps are

also detachable, being fixed by wedges. The nosebag, saddle-bags, holsters, hobbles, saddle cloth, and girth, and stirrups and leathers are formed as appendages to the saddle. The nosebag and saddle-bags are lined with india-rubber or vulcanized canvas, and are connected to the saddle by spring hooks and D-loops; the saddle-bags are telescopic. The holsters are of leather and have vulcanized india-rubber tops and

bottoms, so as to serve as expanding valises if required, while the hobbles are formed of circular webbing having metal eyelet holes and screw fasteners. In the saddle cloth is inserted fish-skin or woven wire enclosed in felt, and the saddle and cloth are fastened round the horse by girths of circular webbing lined with india-rubber or rubber cloth and so adapted to carry water or to be inflated with air. The stirrups and leathers are secured together by an iron frame covered with leather or canvas adapted to cover the calf of the leg of the rider, to act as a splash-dash and form a protection to the horse's flank.

397. Pitman, J. T., [a communication].
Feb. 11.

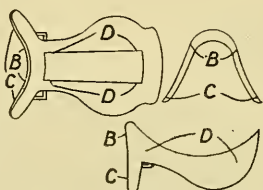


Collars, neck.—Metallic hames are made by apparatus consisting of a series of metal rings in which dies are cut, secured to rollers arranged in pairs and operated by toothed gearing. One end of a small bar of iron is placed in an angular groove a^1 against the stop b^1 on the feed-rollers E, and the bar is then delivered into the sizing-dies 2, on the rollers A, A'. Suitable guides convey it into the next set and so on until it has passed through any desired number of rollers, when it is placed upon its edge into the feed-rollers opposite the dies 1, and again passed through. In the ends of each set of these dies there is a hole or punch s, to form end loops on the bar. The draught eyes are formed upon the same roller and are attached to the hames by a blow from a vertical hammer. The terrets for the reins are similarly attached.

527. Shearman, J. E. Feb. 23.

Saddles; collars, neck; pads; materials.—Saddle-trees are made of hardened rubber, of vulcanized and hardened rubber combined, of vulcanized spongy rubber, or of a combination of wood or metal with rubber.

The padding under the saddle-trees is made of rubber, rubber web, a network of rubber web or thread, or vulcanized spongy rubber. Collars are



made of rubber and leather combined. The Figures show the invention in connection with an ordinary hunting or riding saddle-tree, but it is equally applicable to all kinds of saddles or pads for horses and other animals. One or more layers of spongy rubber &c. are secured inside the crutch B, C and to the under part of the side and back frames D. The usual padding under the saddle-tree may be replaced by vulcanized rubber webbing in combination with fibres or fabrics, or alone by the employment of rubber in a cellular, tubular, or lattice form. Collars are made in one or more pieces, and india-rubber is used as a stuffing-material. Rubber, alone or in combination with fabrics, may be used for covering the collars.

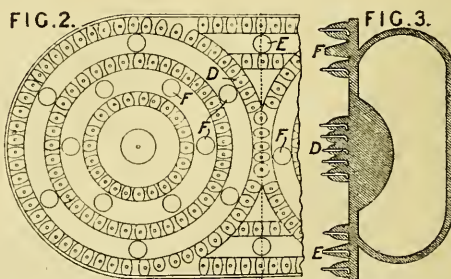
602. Jones, F. D., [a communication].
March 2. [Provisional protection only.]

Bits.—The mouthpiece of a bit is made hollow to enclose honey, sugar, or the like, which melts and passes into the horse's mouth through perforations in the mouthpiece of the bit.

915. Holden, H. A. April 2. [Provisional protection only.]

Terrets and like guide-rings; fastening; ornaments for unspecified articles.—Terrets, cock-eyes, buckles, and ornaments for harness, coach-door hinges, handles, coach beading, and other metallic fittings for railway and other carriages are made of zinc instead of copper or copper alloy. The parts are finished by electroplating and burnishing.

1265. Pitman, J. T., [a communication].
May 5.

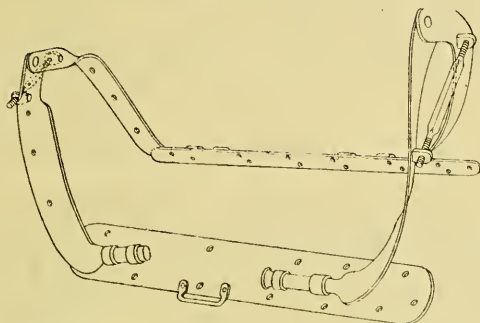


Currycombs.—The back is made of india-rubber &c. with a series of ridges, cones, or other suitable teeth of the same material raised upon it, a part or all of which may be strengthened by wire &c. In the comb shown in Figs. 2 and 3, D are teeth with projecting metallic points, E teeth strengthened by wires not projecting, and F teeth without wires. The currycomb without the wires will serve as a flesh brush.

1333. Carbonino, R. C. May 12. [*Provisional protection only.*]

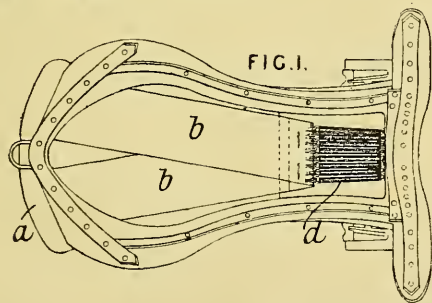
Nosebags.—The bottom of the nosebag, made of osier or other material, is caused to rise, as the fodder is consumed, by means of a counterweight connected to it by cords passing through rings near the mouth of the bag.

1892. Jones, W. E. July 8.



Saddles.—Saddle-trees are made adjustable to suit horses of different sizes. The pommel and cantle are made high, and each is composed of two pieces of spring steel united by a pin, about which they can turn. The angle between the two pieces is adjusted by a right and left hand screw. The side pieces are free to turn on the ends of the pommel and cantle, so that they may adjust themselves as required. A loop is riveted to each side piece for the stirrup leather.

2062. Clay, J. July 28.



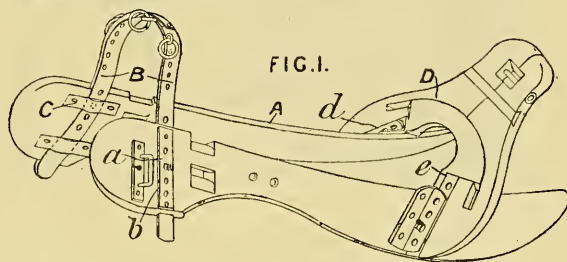
Saddles.—To give elasticity to saddle seats, one end of each of the webs *b* is attached to helical springs *d* connected to the saddle-tree *a* and placed either at the front or back part of the saddle or in both positions. The springs may be of ordinary construction or they may be enclosed in a tube and bear against a shoulder at the end of a rod passing up the axis.

2105. Duriez, L. Aug. 4. [*Provisional protection only.*]

Stopping runaway and restive animals.—Apparatus for stopping saddle or draught horses by locking their legs consists of a frame in which are two catches or jaws working on pivots and kept in position by springs. When in use, the

jaws open to allow a conical stop to pass through, and are then closed by a spring so as to prevent the stop from being drawn back. One or more of these stops are fixed to a cord which is connected at one end to a collar on the horse's foot. The other end of the cord is attached to a loose shoulder band which is passed round the other leg of the horse. A martingale may be used instead of the shoulder band.

2274. Brady, J. D. Aug. 28.



Saddles, adjustable. The front parts of the wooden side frames *A* are provided with metal straps *C* through which slide the extensions of a metal connecting-piece *B*. Screws *a* are passed through plates *b* on the side frames into holes in the extensions, and so secure the side frames in any position. The rear parts of the side frames are provided with angle-iron plates *d*, through which screws are passed into holes in metal plates *e* on the connecting-piece *D*. The framing of the saddles may be formed of open work, lined or not, so that, should a sore occur in any place, the framing may be adjusted to bring an open part over the sore.

2497. Lejeune, E. A., [*Brunessaux, J. J.*] Sept. 29. [*Provisional protection only.*]

Breeching.—Horses' cruppers are made of vulcanized rubber instead of leather. The cruppers are made hollow and are formed by placing sheet rubber in suitable moulds, together with sulphur for vulcanizing it, and then immersing the mould in a bath of molten sulphur or in a vapour bath.

2528. Shakespear, H. J. C. Oct. 2. [*Provisional protection only.*]

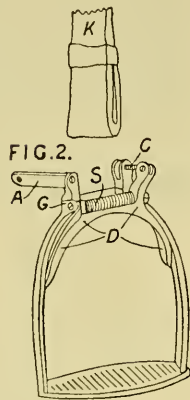
Saddles.—A single-wheeled carriage for military and other purposes is formed by mounting the wheels between the shafts, the front ends of which are cased in square-sectioned irons adapted to fit exactly into iron loops firmly fixed to the tree of a saddle secured like a riding-saddle.

2592. Brown, H., and Brown, W. Oct. 9. [*Provisional protection only.*]

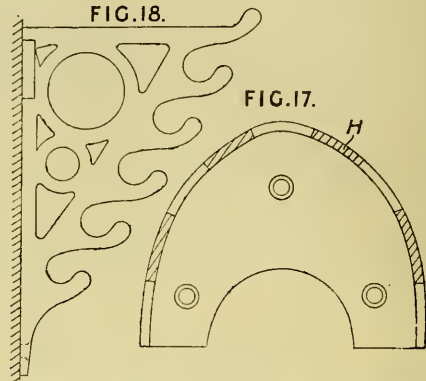
Whip-sockets are made of a glass or iron tube, having a loose top and bottom, and mounted in metal or otherwise so that the tube may be adjustable or fixed.

- 2593. Newton, W. E.,** [a communication].
Oct. 9.

Stirrups.—Relates to means for releasing a stirrup by pressure such as is produced when the rider is thrown. The stirrup strap K normally engages a pivoted bar A, which is held in position by a draw-bolt C carried by a frame D pivoted in lugs G on the stirrup. Pressure on the frame D withdraws the bolt C against the action of the spring S, and so releases the stirrup. Side shields may be fixed to the stirrup for preventing its unnecessary release.



- 2777. Cottam, G. H., and Cottam, H. R.**
Oct. 31.



Brackets and stands for.—To facilitate the drying of saddles, pads, or other portions of harness, supporting-brackets H, Fig. 17, are formed with slits or perforations for the passage of air. Fig. 18 shows a bracket formed with hooks, projecting one in front of another, for supporting girths or other parts of harness.

- 2700. Rand, T., and Beckley, G.** Oct. 23.
[Provisional protection only.]

Saddles.—In saddle-trees for military saddles, the sides are made of thick leather, strengthened by a strip of steel; the bridge consists of an iron or steel arch, and the cantle is of wood.

- 3055. Tanton, J.** Dec. 11. [Provisional protection only.]

Lassos or shepherds' crooks. To prevent injury to the leg of a sheep caught hold of by a shepherd's crook, the hook is connected to the staff by a short thick piece of india-rubber.

A.D. 1858.

- 363. Girardet, C.** Feb. 24. [Provisional protection only.]

Back and belly bands.—Two pieces of metal or other material are fastened together in any manner to form a ring or cylinder which is attached "to the proper strap." The shaft is placed in the open bearer and the two halves are then locked or pinned together.

- 378. Middleton, S.** Feb. 25. *Drawings to Specification.*

Whips; whip-sockets.—Whip handles, whip-sockets &c. are made by joining two pieces of

leather together edge to edge by malleable brass &c. wire passed obliquely through the centre of the edges of the leather, which is worked in a damp state by soaking it in thin glue, paste, &c., and then laced spirally through machine-made holes in the face of the leather. The wire is then tightened by pulling, or by pressure in a die, or by a mandrel, and the ends are fastened.

- 777. Parmelee, S. T.** April 10. *Drawings to Specification.*

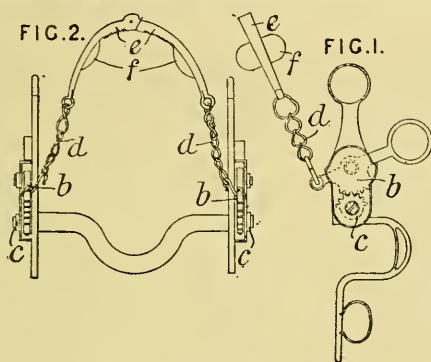
Saddles; traces.—Belting for tracings and girthings is formed of layers of woven material, such as canvas, cut to width and covered on each

face with a layer of india-rubber, gutta-percha, or a combination of the two. The strips are pressed together, and are heated to vulcanize the composition.

991. Meall, H. L. May 4. [*Provisional protection only.*]

Fastening.—Sheet-metal hooks for use in fastening harness are provided with spring tongues to prevent accidental unfastening. Cross-shaped blanks are cut from a sheet, the short side arms form loops for attachment, the long part of the stem forms the hook, and the short part forms the spring tongue.

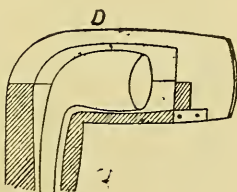
1014. Clark, W., [a communication]. May 6.



Bits; bridles; stopping and controlling runaway and restive animals.—A noseband, with teeth on its inner surface and furnished with two steel pallets for pressing on the horse's nostrils, is attached to an ordinary bit, the movement of the noseband being produced by a supplementary rein. As shown in Figs. 1 and 2, the noseband *e*, which is sometimes made in two parts hinged together at the centre, and which is furnished with the pallets *f*, is connected by chains *d* to toothed segments *b*, having eye-pieces to which the supplementary rein is attached. The segments *b* gear with the pinions *c*, so that a pull on the supplementary rein presses the noseband and pallets against the horse's nostrils and also causes a rotation of the bit in its mouth. As shown in the drawings accompanying the Provisional Specification, the pallets are larger than those shown in Fig. 3; they are attached directly to the bit and, by rising in the horse's mouth, press its upper lip against its nostrils.

1085. Colgate, J. May 14. [*Provisional protection only.*]

Whips.—A tobacco-pipe case is formed on the handle *D* of a riding-whip by making it of two hinged hollow parts provided with a spring catch. The whip stem is hollowed out to receive the stem of the pipe.



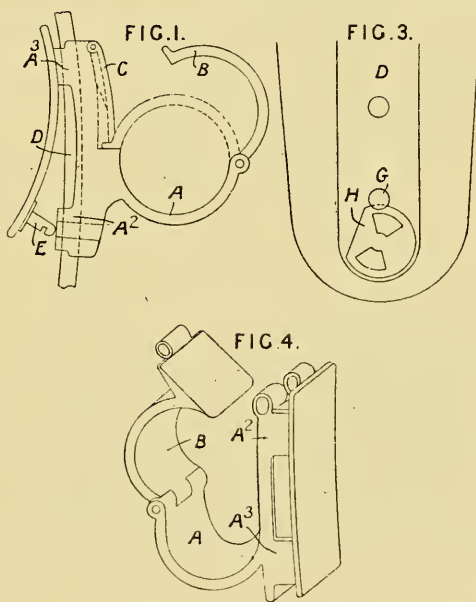
1206. Arnal, A. May 28. [*Provisional protection only.*]

Nosebags are formed so that the corn is supplied to the horse in small quantities. The corn is contained in bags on either side of and communicating at the bottom with a centre bag adapted to admit the animal's mouth. A hole in the board which forms the bottom of the centre bag is covered with a fine grating, which allows dust or dirt to fall through it. The bags are strapped to the horse's head, and strings are provided to tie their tops and prevent the corn from being shaken out.

1317. Luis, J., [a communication]. June 10. [*Provisional protection only.*]

Nosebags.—Nosebags are made of coarse canvas so as not to interfere with the breathing of the horse.

1492. Le Souëf, D., [Girardet, C.]. July 2.

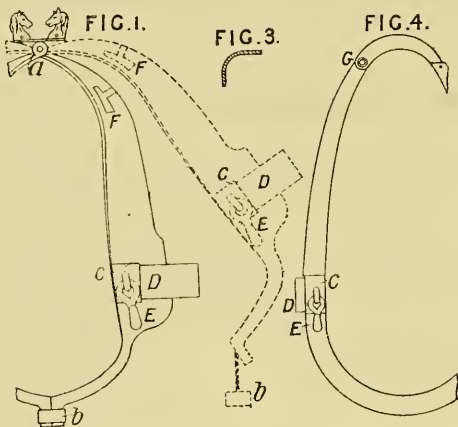


Tugs, shaft; saddles.—Shaft tugs are arranged to clip upon the shaft, and are adjustable on the saddle strap. The shaft is secured in the part *A* of the tug by the hinged cover *B*, which is locked by a spring-controlled plate *C*, or by means of a pin, Fig. 4. The saddle strap *D* passes through loops *A2*, *A3*, and the tug is fixed in the required position on the strap by a pin *E*, attached to a leather or other flap, which passes through a hole in the tug and one of a series of holes in the strap and may be secured by a spring or catch. The strap *D* is made fast on the top of the saddle, and a pin *G* on the saddle passes through the last hole in the strap and may be locked by a revolving washer *H* engaging a groove therein, as shown in Fig. 3.

1553. Porecky, A. July 10. [*Provisional protection only.*]

Whips.—Whalebone, horn, tortoiseshell, or other corneous material, or artificial imitations of these substances, are employed for the manufacture of whips and similar articles of hollow or tubular form, strips of the material being bent, pressed, or otherwise formed into plain, fluted, ornamented, flexible, or rigid tubes, &c. Such hollow articles may afterwards be wholly or partially filled with a suitable composition or material; or they may be left unfilled, so as to allow of their sliding telescopically one over the other.

1629. Lambert, C. July 19.



Collars, neck; fastening.—Collars are made of iron, wood, or other hard material, in two parts hinged together at *a* and fastened by a ring *b* or a thumb-screw. The sides are shaped to the shoulders of the animal, Fig. 3, and little or no padding is required. The tug hooks *D* are fixed in sockets *C* by screws or springs, and the hooks *E* are attached to eyes. The reins pass through holes *F*. The collar may be of tubular steel, and may have its upper part hinged at *G*, Fig. 4.

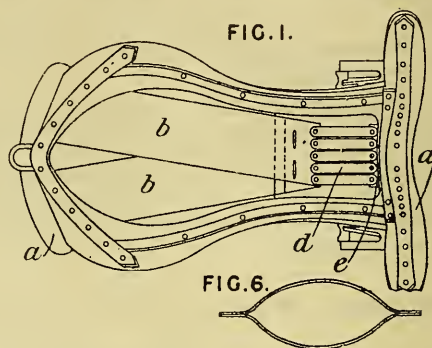
1696. Hurn, G. July 28.

Nosebags.—The edges of matting formed of aloe, coco-nut, cotton, hair, jute, Manilla, Spanish, &c. fibre for making bags such as nosebags have several strands of weft removed. The warp ends are then bent over and secured by sewing by the removed weft strands, &c., so as to give the appearance of a cord. The sides of the bags are formed by uniting the selvage edges.

1834. Houghton, G. Aug. 12.

Saddles.—The seats of saddles are made elastic by springs which keep the webs in a state of

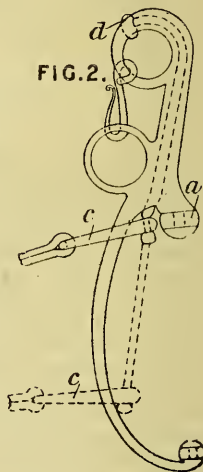
teusion. Flat undulating springs *d* of steel &c. are riveted to the plate *e*, which is fixed to the front of the saddle-tree *a* and to the webs *b*. The



springs may be fixed to the back of the saddle-tree, or to both front and back, or they may be fixed in the middle of the webs. Fig. 6 shows an alternative form of spring.

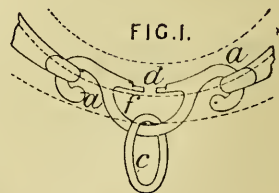
2045. Timms, T. Sept. 9.

Bits.—The reins are attached to sliding pieces on the side bars of a bit, so that the leverage of the pull can be varied. The sliding rings *c* are normally held near the mouthpiece *a*, jointed to the side bars, by springs *d*. The springs are preferably of vulcanized india-rubber, and are fitted within the hollow upper part of the side bars. As the pull in the reins is increased the side bars are inclined, and the rings *c* slide down the bars till they assume the position shown in dotted lines.



2380. Craddock, W., and White, J. Oct. 25.

Collars, neck.—Connecting - links for hames are formed at the ends with hooks *a* or eyes, to engage with eyes or hooks, respectively, on the hames. The pole-chain ring *c* depends from the middle part of the link, and a gap *d* may be provided for its removal. The link is reduced at *f* to take a strap for the attachment of the martingale, so that the link and strap bear uniformly on the collar.



2443. Lancaster, J. Nov. 2. [*Provisional protection only.*]

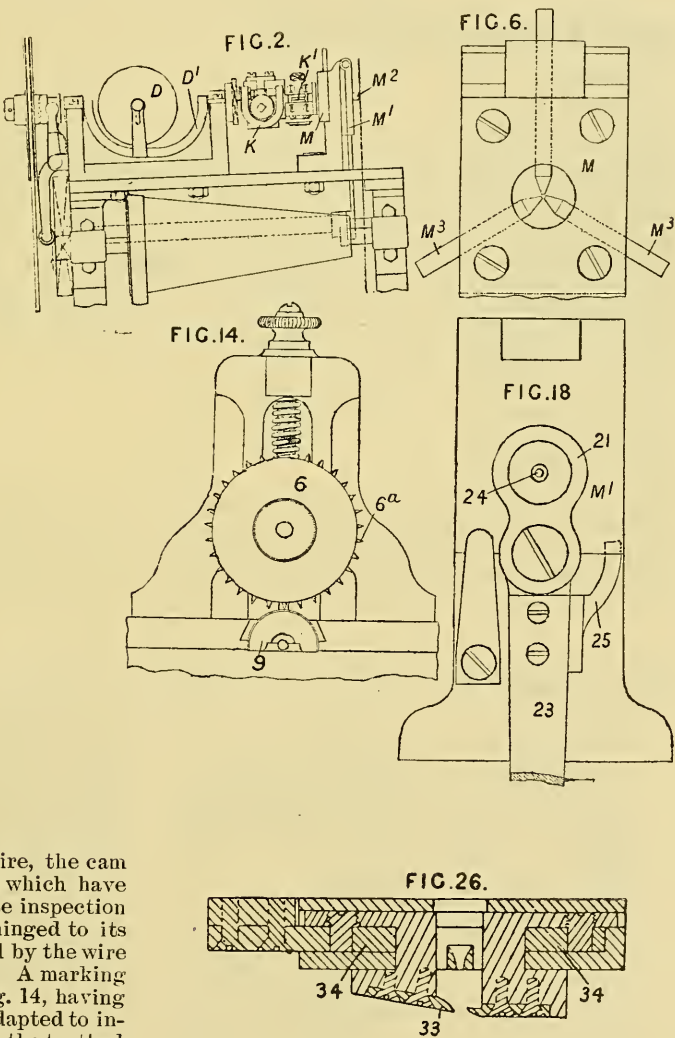
Rein-holders.—Apparatus for holding the reins and for keeping them held tight when horses become restive or run away, comprises a frame united to the ends of a bar pivoted in eye-bolts on the footboard of a vehicle. Rein-holders, fastened by turning their ends, or by suitable bearings, screws, and nuts, work freely on the bar, and a catch, adapted to be released by the foot of the driver, engages a ratchet-wheel on the bar to keep it in any required position. A drum and friction strap may replace the ratchet-wheel.

2484. Green, W., [a communication]. Nov. 6. [*Provisional protection only.*]

Fastening traces. To the end of the whipple-tree is attached a socket closed by a flat plate, having an oblong slot, through which passes a button of similar shape on a plate fixed to the end of the traces. The button being turned round when inserted, cannot jerk out of the slot, and to ensure this a helical spring is placed in the socket and presses a rubber plate against the button, holding it in grooves cut inside the plate and at right-angles to the slot.

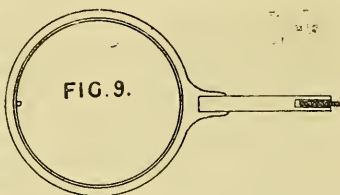
2518. Corner, J. Nov. 10.

Riveting-machines.—A machine for making screwed rivets from wire, and riveting parts of harness and other leather goods is shown in the Figures. A wire bobbin D, Fig. 2, is carried in a revolving-frame D¹, and the wire passes into a second frame K, carrying two pairs of rolls K¹, placed at right-angles and adapted to grip the wire and feed it forwards. The wire passes into a screw-cutting jaw M, and then through a shearing-jaw M¹, cutting off lengths to form rivets, which are passed into the work, held opposite to the outlet M² of the machine. The screw-cutting jaw M, Fig. 6, has cutting-blades M³ and is fitted with a central guide-block, having a tapered perforation. The shearing-device M¹, Fig. 18, has a perforation 24 for the wire, which passes through a fixed plate 21, and a shearing-blade rocked by a handle 23. By means of a curved guide 25, the shearing-blade is moved outwards so that it travels with the wire during the shearing operation. In a modification, a rocking plate has eccentric cam grooves which cause two detachable cutters to approach and sever the wire. As adapted for thick wire, the cam plate 34, Fig. 26, carries cutters 33 which have inclined cutting-blades. To facilitate inspection of the cutters, the cutting-plate is hinged to its frame. The head of the rivet is formed by the wire being screwed against a metal plate. A marking or perforating tool has a wheel 6, Fig. 14, having teeth 6^a on its periphery which are adapted to indent the work as it is passed between the toothed wheel and a roller 9.



2545. Wadsworth, J. Nov. 13.*Spurs and spur-carriers.*

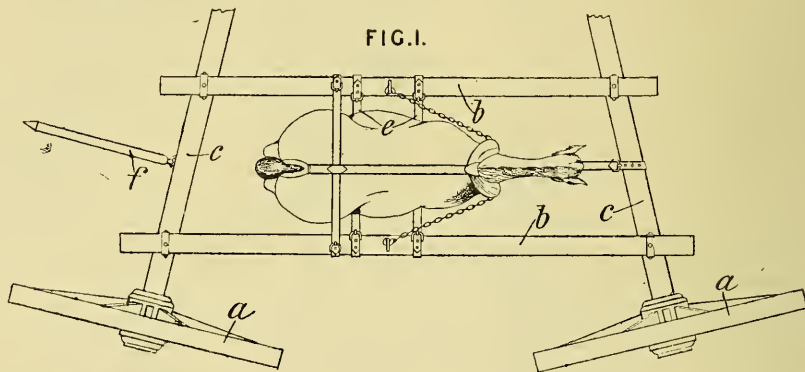
Relates to the attachment of spurs to boots provided with heels having movable parts, and consists in forming the holding part of the spur in the shape of a complete hoop or ring, as shown, which is provided with a pin to engage with a hole in a fixed part of the heel. The heel is flanged to prevent the hoop or ring from moving upwards.

**2553. Lavater, M. L. J.** Nov. 13.

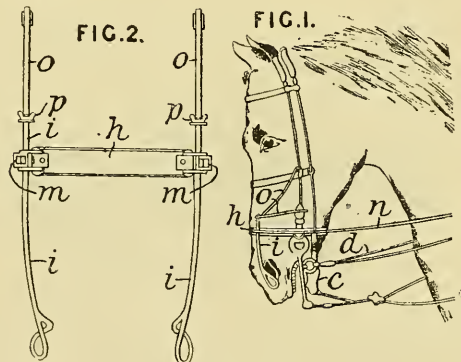
Saddles.—Relates to the manufacture of perforated or cellular sheets of india-rubber applicable for making saddles, &c. According to one process, punches or like tools are employed to cut out portions of a sheet of sulphurized india-rubber. The cellular sheet so produced is then vulcanized. Two or more sheet may be cemented together to form a thick sheet. In another process, a sheet of sulphurized india-rubber, preferably warm from the rolls, is moulded by placing it over a tray formed with studs, preferably hexagonal, and passing the two between rollers. Or the plastic rubber may be pressed out or through the mould. The tray is then covered by a plate, and the rubber is vulcanized in the mould. The moulded sheets may be vulcanized on separate trays, the cells being first filled with sand.

2568. Bunting, J. G. Nov. 15.*Training and breaking-in horses.*

—The horse is made to move in a circle round a post, while confined in a framework made by detachably fastening cross-pieces *b* to horizontal radial arms *c* having their inner ends connected to the post, cart-wheels *a* being mounted on their outer ends. Straps *e* passing under the belly of the horse, and other straps attached to various parts of the harness, prevent the horse from lying down or kicking, and a pole *f* prevents him from going backwards. The height of the cross-pieces or shafts *b* can be altered as required, and a "dicky" or seat may be attached



to the hind pole for driving and teaching the use of the bit and rein. In some cases the long arms are dispensed with and the horse is confined in a rectangular frame, a leading horse being attached which is driven from the seat at the rear.

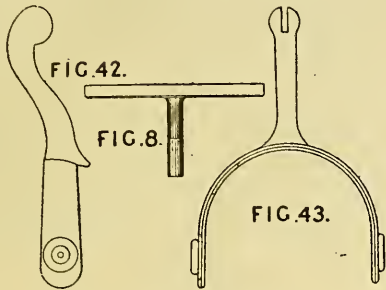
2597. Clark, W., [Varéille, L., and Drevet, L. H.]. Nov. 17. [Provisional protection only.]

Controlling restive animals; bridles.—Restive animals are controlled by a device for closing their nostrils; and a "fillet" bit *c*, with reins *d*, is provided in addition to the ordinary bit and reins. An extra noseband *h* of metal, having a removable pad, is secured by a strap. Rods *i* can turn in the band *h* and in eyes on arms *o* connected to the bridle, and have loops *m* to take reins *n*. The lower ends of the rods are adapted to close the animal's nostrils when actuated by the reins *n*, and are returned to their normal positions by springs on the band *h* acting on cams on the rods. Screws *p* allow of the arms *o* being removed and the device taken to pieces.

2605. Oakes, J. Nov. 18.

Spurs.—Spurs are made by stamping a metal blank in a series of dies instead of by forging them.

A T-piece of iron is first stamped to the shape shown in Fig. 8. By heating it and operating on



it in a number of suitably-shaped dies, the iron is formed into a spur as shown in Fig. 42 and 43.

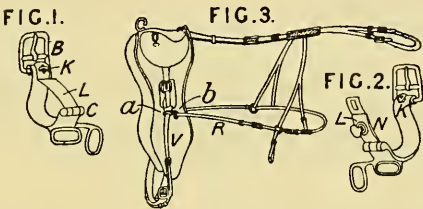
2709. Ferrare-Michal, F. S. Nov. 29.
[Provisional protection only.]

Bridles are made without bits. The noseband is provided with a piece of metal which is connected to two other metal pieces. The latter pieces are joined by bars, one of which passes over the animal's nose while the other is placed in its mouth. The former bar is provided with rings for the attachment of the reins, whereby this bar and the piece in the noseband can be caused to press more or less on the nose. The device is buckled to the headstall, and has arms at each side adapted to enter loops thereon.

3004. Sievers, J. H., [Zipp, C.]. Dec. 31.
[Provisional protection only.]

Saddles ; bellybands.—The bellyband of a riding-saddle is adjusted by turning a ratchet-wheel mounted in a box fixed to the saddle. The ratchet-wheel rotates two pulleys, round which pass cords connected to one part of the bellyband by loops, eyelets, or clasps.

3006. Normandy, L. A., [a communication]. Dec. 31.

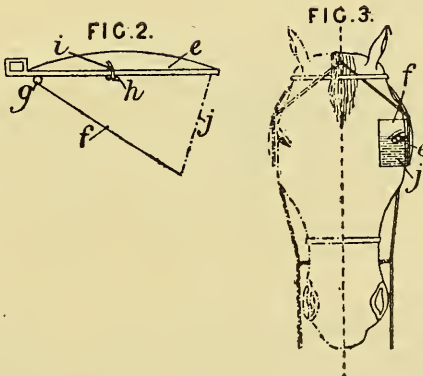


Tugs, shaft.—Horses are quickly put to or unharnessed by means of a shaft tug such as is shown in Fig. 1. A metal clasp has a tongue L hinged at C and is held by a turn-button K. The clasp is attached to the saddle or pad by the buckle B, and to the bellyband V, Fig. 3, by the ring a, and to the breeching R by the ring b. For small shafts, a plate N, Fig. 2, and screw tightener are fitted to the tongue L. A spring may be added to release the tongue L on turning the button K.

A.D. 1859.

22. Lévêque, A. L. Jan. 1.

Stopping and controlling runaway and restive animals.—Apparatus for subduing or stopping runaway or restive horses comprises a wire frame f on the blinker e, provided with a spring g which serves as a pivot and tends to open the frame so that a piece j, thus brought before the eyes of the horse, forces him to hold his head down in order to see his way, and so gives the driver better control. A small catch h, actuated by a rein i, normally holds the frame against the blinker. On saddle horses, pivoted vanes supported by a band round the animal's head are turned up by a connected rein, so that the sight of the horse is partially cut off as before.

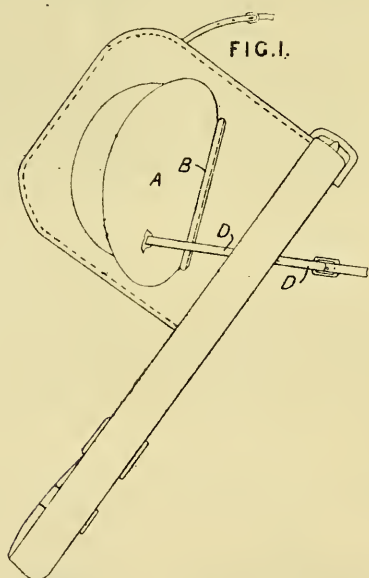


42. Corfield, W. Jan. 5.

Collars, neck; bridles; traces.—Chains for use with hames, head stalls, harness, &c. are made of double links, one set being longer than the other. Normally the short links carry the load, but if these break, the load is received by the longer links. In a modified form, the links are all made the same length, each chain then bearing half the load. The chains may be formed "in single or alternate lengths with the usual known methods of single and double parallel links."

81. Biers, J. Jan. 11. *Drawings to Specification.*

Tugs, shaft.—In two-wheeled vehicles, the shaft-tugs work in slots or guides or between rollers, and are connected to the brake blocks so that the brakes are applied automatically when the draught animal presses backwards.

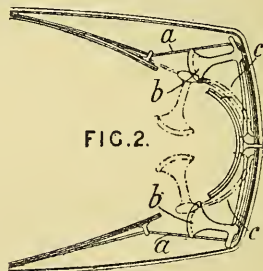
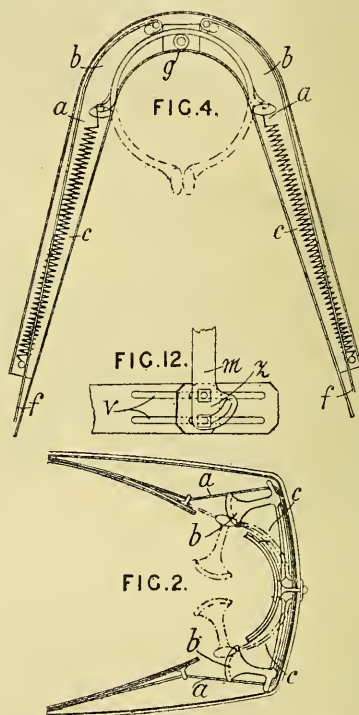
379. Inger, H., [Souché, E.], Feb. 10. [Provisional protection only.]

Bridles; stopping and controlling runaway and restive animals.—The portion of the blinkers next the horse's eye is hollowed out. Flaps A, Fig. 1, are attached by hinges B and connected by straps D to a rein held by the driver or fastened near him. When this rein is pulled, the horse is temporarily blinded and checked. The flaps are released by india-rubber or steel springs at the hinges.

529. Johnson, J. H., [Acket, —], Feb. 28.

Stopping and controlling runaway and restive animals; bridles; bits.—For checking and stopping horses in saddle or harness, two pads b, attached to

a spring c secured to the front of the noseband, are caused, by pulling a rein a passing through each end of the spring, to pinch the nose of the animal and so prevent breathing. An outer casing conceals the apparatus. On relaxing the pull on the rein, the spring causes the pads to assume their normal position. In the arrangement shown in Fig. 4, the pads a are each fitted to an arm b connected to a spring c and provided with a projection to which the reins f are attached. On pulling the reins, the arms slide along their guides g and over suitable rollers, bringing the pads to the animal's nose. On releasing the reins,



the springs return the arms and pads to normal position. In a third arrangement, the reins are secured to the ends of two springs each carrying a pad. In a further modification, arms are placed laterally, and when reins attached to their extremities are pulled, they turn on their centres, so compressing the nostrils of the horse. In order that the straps of the noseband may be brought nearer together, the inclination of the branch of the bit m, Fig. 12, is varied by altering the position of nuts z passing through slots v in the strap.

548. Valda, J. March 2. [Provisional protection only.]

Fastening.—A stud or solitaire may be modified for fastening harness. The collar stud described is made in two parts. One has a head and hollow shank, a collar being formed on the inside of the end of the shank. The other head has a hollow shank containing one or more spring catches

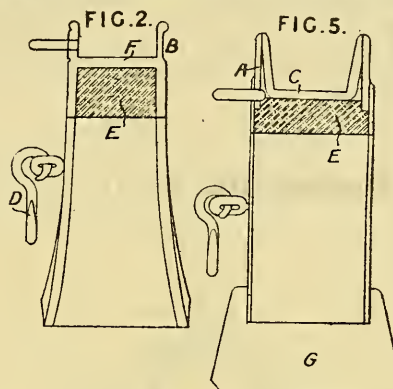
which expand laterally and abut against the back of the collar on the other part. These springs are acted upon by a stud or by a pin or pins which may form part of the head of the stud.

621. Yuill, J. March 10.



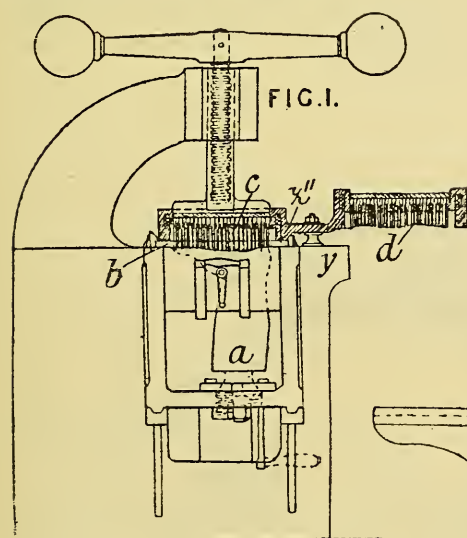
Saddles, harness. Troughs for taking the chains or backbands of cart and other harness are made of cast or wrought iron, in one piece or more, and have lower flanges to take the wood or other material E, Fig. 2, for fixing the trough to the saddle. The wood may be in several pieces, with the grain running in different directions, and riveted or screwed to the trough. Eyes on one side of the trough carry hooks D to which the breeching is attached. Expanded ends, such as G, may be welded to a separate strip forming the base F of the trough, when the sides of the trough will be riveted to upwardly-turned parts

of the ends G, which parts protect the sides from the wearing action of the chain. The upper edges B may be strengthened by ridges or by tubular pieces of wrought iron, split longitudinally and sprung over them. In another modification, Fig. 5, the trough is formed by a bent piece C

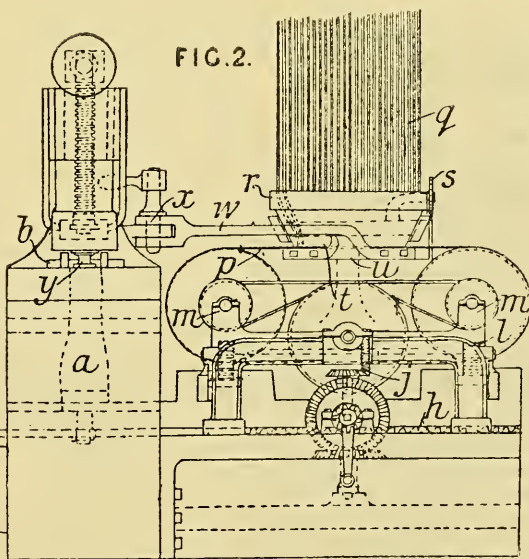


of metal riveted to the side pieces A and to the wood E, while the lower flanges consist of plates riveted to the side pieces. The ends of the pieces C are bent over and beaten down to form the part G. The side pieces may be japanned or polished.

640. Waller, R. March 14.



Riveting-machines.—Relates to means for joining leather and other materials by means of metal pegs or rivets in the manufacture of boots and shoes, harness, straps, and other articles. The rivets are cut in the machine from continuous wires *q*, Fig. 2, which are fed by rollers contained in a box *r* and operated by a ratchet *s*. The wires

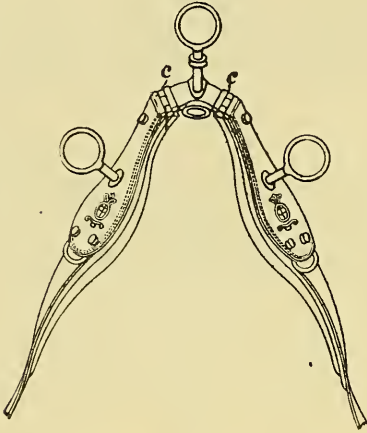


pass on through tubular guides *t* fixed on a sliding or pivoted frame, and into a rivet guide *u*, and are then cut to length by pliers, actuated by cams or by means of two perforated and relatively sliding cutter plates, or by a band or circular saw. The band saw *p* is carried on rollers in a frame *m* which is reciprocated by rack-and-

pinion gearing *l, j, h*. The rivet guide *u* is carried by an arm *w* pivoted at *x*. The arm swings and brings the rivet guide over the work on a block. The work is then perforated by prickers or awls *c*, Fig. 1, carried on an arm *z*¹¹ pivoted at *y*, and the rivets are forced in by plungers *d* carried in a driving-block at the opposite end of the arm *z*¹¹. The rivets may be clinched by splitting the ends, or by forming a conical hole at the ends to make contact with projections on the block for spreading the ends for clinching.

867. Postlethwaite, R. April 7.

FIG. 3.



Saddles.—Harness saddles are made with hinges *c* to permit of their being used for animals of different sizes.

1018. Angus, J. April 23.

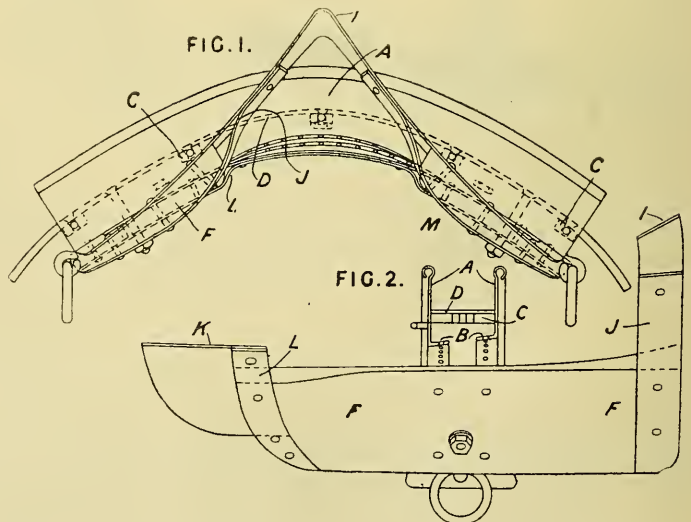
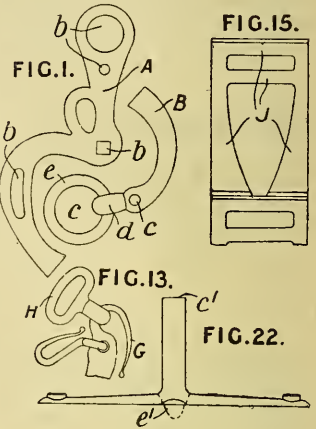
Saddles.—In harness saddles, the trough consists of two metal side pieces *A*, Fig. 2, connected by stays *C* supporting a bottom piece *D*. To prevent the wear of the chain on the trough, the ends of the side pieces are strengthened by additional thickening-pieces riveted to them. The under part of the trough may be filled with a curved wooden piece. To the underside of the curved band forming the head or "gullet" *I* is riveted a metal band *J*, and the free ends of these bands extend to the edges of the saddle-tree *F*. The pieces of wood forming the saddle-tree are enclosed by a metal strip *L* and connected by a broad metal plate *K*. In another

890. Hawkins, J. April 9.

Bits; spurs; stirrups.—These are cut from iron or steel sheets or rods and swaged between dies. In the case of bits, parts *A, B*, Fig. 1, are cut out, and holes *b, c* pierced in the ordinary way. Sufficient metal is left at *d* to be jumped up to form a bead to clip the ring *e*. The parts are then further formed and welded together in ordinary stamping-dies, the fins of superfluous metal

being afterwards cut off. Pieces *J*, Fig. 15, for the upper parts of stirrups are cut from a bar, and the lower parts are twisted through a right-angle, the piece thus formed being swaged between dies. The lower part of the stirrup is separately formed and is welded on. In making spurs, a circular rod is slit longitudinally, and the parts bent out and swaged, as shown in Fig. 22. The part *e*¹ is afterwards elongated to form the heel pin, and the shank *c*¹ is finished to the pattern required.

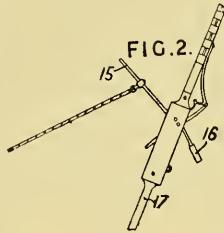
Fastening.—The upper parts of bits formed as above, and especially suitable for cavalry bridles, are drawn out into thin parts forming springs *G*, Fig. 13, in the planes of the cheeks. The loose top eyes *H*, formed in dies, can only be removed by a downward and outward pull. In a modification, the cheek is bent into a hook closed by a pivoted spring catch.



arrangement, the side pieces are of cast iron, and the flanges B rest on the wood F. In a further modification, the stays are of T-section.

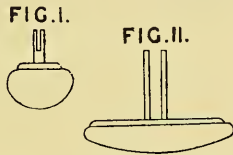
1158. Luis, J., [*Garin, P. I.*] May 9.

Whips.—A two-horse gear is fitted with two mechanical whips, one for each horse. A clamp is adjustably mounted in the pillar of the machine, and holds two similarly-arranged cords, which pass over guide-pulleys and are branched, one branch being fastened to the horse's bridle, and the other to the lever 15 of a mechanical whip 17 which carries a whip in the socket 16. The arrangement is such that if one horse pulls too hard it actuates its own whip.



1169. Wilkinson, W., and Whitley, C. May 10.

Fastening.—Buttons or "snaps" are made with two prongs which are passed through the material and bent down, with or without the use of a washer. In Fig. 1 the prongs *a* are shown springing from a central stem. Fig. 11 shows wires *b* springing directly from the head.



1184. Vasserot, C. F., [*Marque, L.*] May 11. [*Provisional protection only.*]

Bridles.—The noseband of a bridle is made of a steel spring surrounding the nostrils, and is furnished at each end with an inwardly-projecting olive, the olives normally pressing one against the other. When the spring is drawn back by a string, the olives are separated and press upon the nostrils, a chain limiting the movement, but, by means of another string fixed to the chain, the spring may be returned to normal position.

1240. Valda, J. May 20.

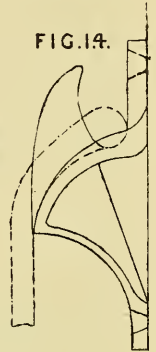
Fastening.—Studs used for fastening harness are shown in Figs. 17 and 18. The head and shank shown in Fig. 17 press down the spring in the bottom part, Fig. 18, and are secured by a pin and bayonet joint. In a modification, the back piece is provided with chains, cords or ribbons, the tags of which either pierce or are passed through holes in the material. The cords &c. then pass through perforations, hooks, tubes,



or rings, and over projecting pins in the front piece in order to secure their ends. A third piece, such as a bar, may be used to aid the fastening of the cords.

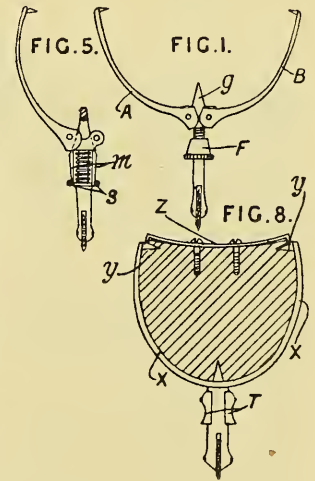
1350. Cottam, G. H., and Cottam, H. R. June 1.

Brackets for.—Fig. 14 shows a bracket so formed that a crupper hung upon it is kept in its proper curved form by its own weight.



1479. Cox, J., Frankham, S., and Frankham, M. June 20.

Spurs and spur-carriers.—Spurs are constructed to facilitate their attachment to and removal from the heels of boots. In one form, the shank of the spur has a point *g* which enters the heel. Arms A, B, pivoted to the shank, carry projections at their ends which are forced into the heel by a conical collar F screwed up against the arms, or forced against them by a spring. In a modification, a collar *m* is pointed to enter the heel, and can



be drawn back over the shank in opposition to a helical spring. The collar is slotted to permit of its passing over the projections on the shank to which the arms are pivoted. It is preferably stamped hot in two parts, which are united at the point and secured by a ring *s*. The spring may act upon two plates T, connected by pins working through slots in the shank, which may be used for compressing the arms or operating the point which enters the back of the heel. The arms X may be of steel, forged with the shank, so that they can be sprung into position. They may be secured by a spring Z engaging notches in the conical projections *y* which enter the heel. The spring Z may be used with the pivoted arms.

The Provisional Specification states that the ends of the arms may be secured to the heel by screws.

1486. Clarkson, T. C. June 20. [*Provisional protection only.*]

Saddles.—The Specification describes a method of manufacturing boots and shoes, but states that the same process is applicable to the manufacture of saddles &c. A sock or cushion is placed on a mould or last, and a "stocking fabric" then drawn over the last and coated with a solution of india-rubber and sulphur or other cement. After fixing a strip of leather round the edge of the bottom of the mould, alternate layers of thin sheet cork and calico are fixed to the fabric by means of the solution, layers of curled hair being, in some cases, interposed between the successive layers of cork. A counter and side lining is also fixed in position, and a leather upper or other covering, if used, after being first cut to shape, is made to adhere, by means of the solution, to the "stocking fabric." A sole and heel is then fixed to the bottom layer of cork, either by using the solution or by screws, the boot or shoe then being placed in a lathe, and the heel turned and polished. In some cases, stiffening-strips of wood, or other material are placed between the various layers of cork forming the sole of the boot.

1490. Gibbs, S. June 21. [*Provisional protection only.*]

Slings, lifting and like; animals, stocks and like appliances for holding.—Consists of improved apparatus for slinging horses, mules, and other animals on board ship or for veterinary purposes. A frame, composed of four uprights suitably braced, supports a bed or sling on which the body of the animal rests. The bed or sling is capable of being raised or lowered to suit the height of the animal. There are also fitted a manger, and padded front and breech bars adjustable by means of chains. When the animal is to be turned on its side for veterinary purposes, there is fitted in addition a kind of trough, consisting of a floor and two sideboards, in which the animal stands and to which its feet are fastened. This trough is hung at each end from the frame, and is swung about its pivots by means of chains and windlasses.

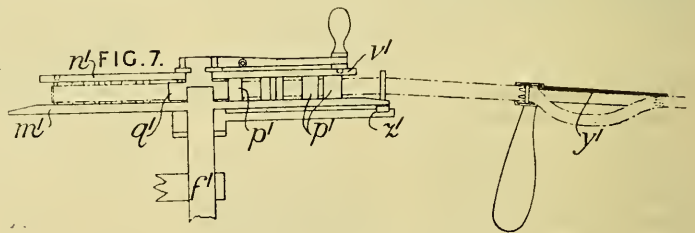
1796. Dowling, E. Aug. 3. [*Provisional protection only.*]

Ornaments for unspecified articles.—Rosettes and other ornaments for harness are made of plain or coloured glass or porcelain. They have a recess at the back in which is cemented a piece of leather, cork, or other material, which is sewn, strapped, or otherwise secured to the harness.

1894. Newton, A. V., [*Singer, I. M.*]. Aug. 17.

Rein-holders: stopping and controlling runaway and restive animals.—For guiding and reining-in horses harnessed to a heavy carriage, the reins are led through guides in a cross-bar z^1 , Fig. 7, fastened to an arm working on a vertical shaft f^1 and clamped to the disc m^1 . This shaft can be rotated by the feet of the driver by means of a disc with roughened surface.

The upper end of the shaft carries two circular discs m^1 , n^1 bolted together and enclosing a central pulley q^1 and rollers p^1 round which the reins are led on to the pulley as shown. The pulley is rotated, to tighten the reins, by a crank



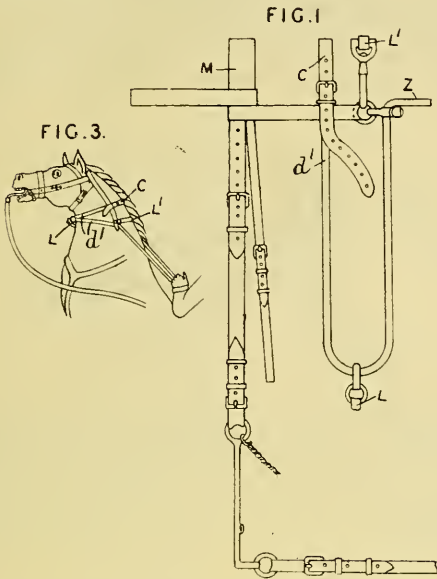
and handle which is held by a stop v^1 fitting in holes in the upper disc n^1 . An india-rubber band y^1 is introduced in the rein to relax the rigidity of the rein on tightening.

2011. Friou, J. Sept. 3. [*Provisional protection only.*]

Runaway horses, releasing; fastening.—The end of the trace is engaged by a pin "which revolves" upon a pivot fixed to the sides of the carriage, and it is secured by an arm, pivoted to the side

of the carriage, which is brought down over the pin. On raising the arms by cords &c., springs attached to the pins cast off the traces, and the pull of the horse then applies the brakes through a second set of traces which pass under the carriage.

2117. Luis, J., [Bourdenet-Bonchot, C.].
Sept. 17.



Stopping runaway horses; bridles.—Runaway horses are stopped by means of an arrangement of straps which, when tightened by pulling a rein, compress the neck and prevent breathing. Fig. 1 shows the arrangement of straps as attached to the headstall M, and Fig. 3 shows it in use. When the rein Z is pulled, the straps d' are tightened and raise a cross-strap L, which compresses the throat of the animal. At the same time the straps C and L' bear firmly on the back of the neck.

2264. Prichard, J. Oct. 5. [Provisional protection only.]

Spurs and spur-carriers.—To render spurs easily detachable, they are provided with tongues to hook round the square corners of the boot heel, which has a screw, into the head of which screws a lug on the inner part of the spur. An internally-threaded screw, in which is placed the end of the spur neck, also projects slightly from the heel, the cavity being protected from dirt by a cap when the spur is not in use.

2309. Earl, J. Oct. 11.

Harnessing, systems of; tugs, shaft; fastening shaft tugs and traces. The different parts of the harness, back and belly bands, breeching, and traces, are attached to a tug a,

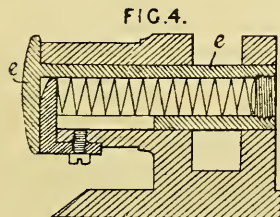
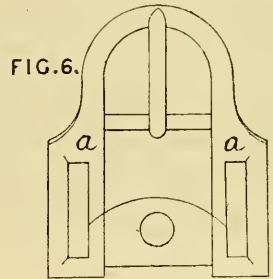
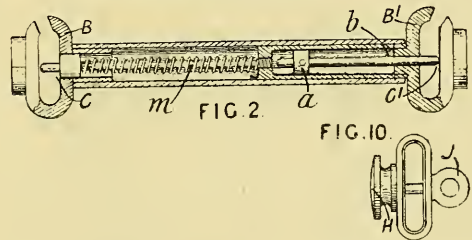


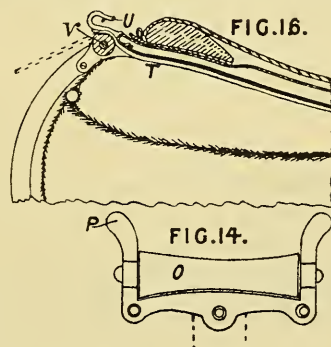
Fig. 6, fitted with an eyeleted plate which fits into a catch, Fig. 4, attached to the shaft, and held therein by a spring bolt e. The spring bolt may be made in the buckle a, Fig. 6, a hinged eyeleted plate being fixed to the shaft. Kicking-straps may be fastened as ordinarily, or two sets of tug fasteners may be used in each side.



2530. Pacey, G. Nov. 7.



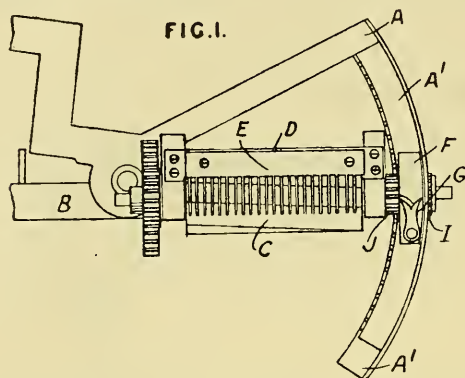
Rein-holders; saddles.—A rein-holder comprises a hollow tube carrying a clip B, Fig. 2, and telescoping upon a tube b carrying another clip B'. A pin is passed through a nut a, through a slot in the inner tube, and through the outer tube. Thus, on pressing out the clip B', the pins C, C' no longer project and the reins may be passed through the clips; when the clip B' is released, a spring m returns the parts to normal



position and the pins secure the reins. In a modification, the spring is on the pin C'. Fig. 10 shows a holder in which a screw H carries a pin adapted to pass through the rein, while an eye J receives a strap to be used as a handle or to be put round a hook on the dashboard of a vehicle. In another arrangement, pins carried by a looped spring enter two clips at the end of a tube, so that, by pressing in the spring, the pins are withdrawn. For holding the reins on a carriage, they

may rest on a roller *o*, Fig. 14, when the handle, such as that shown in Fig. 2, would engage the ears *P*; or the strap of the arrangement shown in Fig. 10 is put round a hook on the dashboard. The rollers may work on vertical pivots, and, if used with a rigid handle, the hook is attached to a strap provided with a spring and adapted to slide in a loop secured to the dashboard. For use with saddles, the handle may be passed into a loop or hook *U*, Fig. 16, secured to an elastic strap *T* passing over a roller *v*.

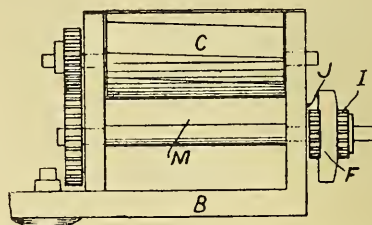
2953. Nabat, X. C. de, and Nabat, A. C. de. Dec. 27.



Horse clippers and the like.—Apparatus for clipping or shearing hair or wool comprises two

levers *A, B*, Fig. 1, pivoted together, of which *B* carries a cylinder *C* fitted with two blades and driven by toothed gearing, as shown in Fig. 2, from the axle *M*. The axle *M* carries two pinions *J, I* separated by a rundle *F* provided with a stop *G* to prevent reverse motion. Shear-

FIG. 2.



ing is effected by the scissor action of the revolving blades with a fixed blade *D*, to which a comb *E* is fastened to regulate the length of the hair. A curved rack *A'* on the second lever actuates the shearing-device. The machine may be modified to work by a crank handle or other means.

2962. Rostaing, C. S. Dec. 28. *Drawings to Specification.*

Back and belly bands; saddles.—Compositions containing gutta-percha, mineral colouring-matters, gums, tannin, and essential oils are used to make "saddles and straps for horses."

A.D. 1860.

164. Ferry, F. J. Jan. 23. [*Provisional protection only.*]

Runaway horses, releasing.—A device for enabling the driver to release the horse or horses from an omnibus or other vehicle is so arranged that a skid is simultaneously applied to the wheel or wheels. The splinter-bar is made in more than one piece, and the traces are secured therein by screws passing through metal loops attached to the traces. A lever is mounted on a plate beneath the splinter-bar, and is connected to the splinter-bar and skid. This lever can be operated from the driver's seat by a strap or pedal, to cause the upper part of the splinter-bar to rise and release the traces, and, with the aid of tie-rods, guide the skid under the wheel. The end of the pole is made to slip off, and is carried away by the horses.

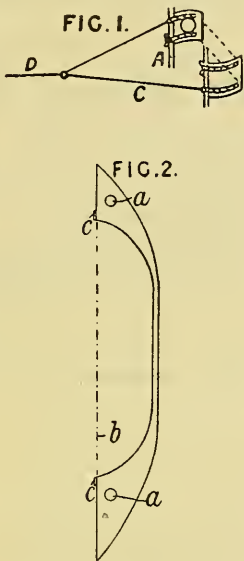
191. Keiffer, F. A. Jan. 25. [*Provisional protection only.*]

Materials; bridles; traces.—Fabrics suitable for straps for reins and traces &c. are formed by compounding wire or fibres, or wire or textile fabrics, with leather &c., and coating with gutta-percha or india-rubber. According to one method of making the fabrics, wires are drawn through combs to keep them apart and are coated by being passed through gutta-percha or india-rubber in a plastic state. Two strips of leather of the width of the strap &c. to be produced are similarly coated, and are placed on either side of the wires and pressed together by rollers which, when making driving-straps, are suitably curved. The strap thus made may be endless. The wire may be woven with a web of fine wire or other material. The india-rubber may be mixed with

sulphur, and the strap, when formed, vulcanized. For the wires, vegetable fibres may be used, and, for the leather, metallic cloth or other fabric may be substituted.

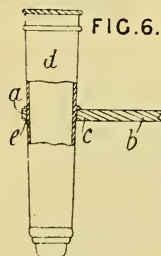
207. Jeandelize, B. P. Jan. 27.

Bridles; stopping and controlling run-away and restive animals.—Blinkers for stopping run-away horses are formed with a cavity, Fig. 2, over which is stretched a sheet *b* of caoutchouc, which keeps the eye of the animal shut when the blinker is pressed close by pulling a cord. The caoutchouc is secured by a ring *c* riveted to the blinkers. Tubes *a* are embedded in the blinkers, and cords, each secured at *A*, pass through a tube in one blinker, over the horse's nose, and through a tube in the other blinker, after which they are connected to a rein *C*. This rein carries a ring fixed to a rein *D*, by pulling which the blinkers are applied. The blinkers may be made of gutta-percha, hardened caoutchouc, boiled leather, sheet iron, or copper, and are covered with leather. The tubes are fixed in the gutta-percha by nails soldered to them, which are fixed in the mould and afterwards cut off level with the gutta-percha.



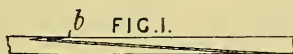
282. Howes, W., and Burley, W. Feb. 3.

Whip-sockets.—The bracket *b* of a carriage is formed with a screw-threaded eye *c*, into which engages a screw-threaded boss *e* on the whip-socket *d*.



292. Mennons, M. A. F., [Dezaux-Lacour, A. L.]. Feb. 4.

Saddles; straps and bands.—In making leather harness or saddlery, leather surfaces are united



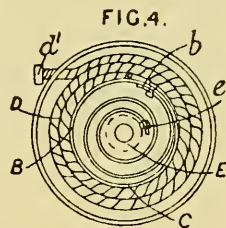
by first roughening them and coating them with a mixture of gutta-percha and petroleum, then placing a thin strip of gutta-percha, softened by heat, between the surfaces, and finally pressing them by means of rollers or otherwise. In making a scarf joint, the edges are bevelled and one is undercut as shown at *b*, so that the thin exposed edges lie both in the same direction.

339. Beard, W. Feb. 8. [Provisional protection only.]

Whips; ornaments for unspecified articles.—In adapting bead-work or bugle-work to harness and whip handles, annealed brass or other wire is twisted or bound round the article, the bead-work or bugle-work being strung on the wire as required before or during winding, so as to bring out the desired pattern, device, name, or initial.

387. Landsberg, E. Feb. 13.

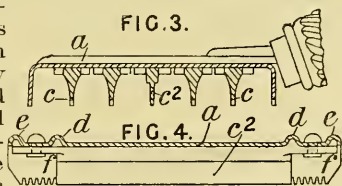
Dog collars, fastenings for. The tape, strap, band, cord, or chain *D*, is contained within a button consisting of two shells of metal, wood, pasteboard, gutta-percha, vulcanite, &c., the rims of which overlap or are otherwise held together. The cord &c. is wound round the barrel *C*, which contains the spiral spring *B* attached at the end *b* to the barrel and at the other end to the knob *e* on the spindle *E*. The knob *d'* prevents the end of the cord from entering the button. When drawn out, the cord is intended to be connected to a button, stud, clasp, buckle, hook, &c. The spring draws the cord, when unfastened, into the button.



629. Veal, T. March 8.

Currycombs.—

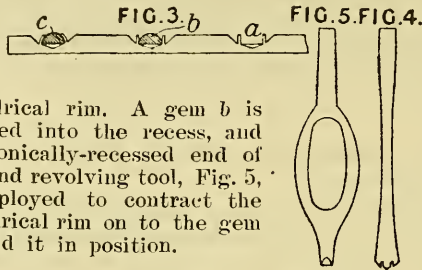
The back *a* is provided with the ordinary edge ribs *e* and with additional strengthening ribs *d*. The toothed bars *c* and a central plain bar *c'* have their ends *f* riveted to the back, and are formed by rolling, stamping, or pressing iron bars to the shapes shown in section in Fig. 3.



640. Sheldon, C. March 9.

Bits; spurs; stirrups; ornaments for unspecified articles.—Real and imitation gems are set or

inlaid in stirrups, spurs, bits, and the other metal parts of harness and saddlery. The article to be ornamented is brought into contact with the shaped end of a revolving hand or power cutter, Fig. 4, which forms a recess *a*, Fig. 3, having a



cylindrical rim. A gem *b* is inserted into the recess, and the conically-recessed end of a second revolving tool, Fig. 5, is employed to contract the cylindrical rim on to the gem to hold it in position.

- 713. Johnson, J. H.,** [*Crane, H.*]. March 17.
[Provisional protection only.]

Bits.—The ordinary bit is formed with a groove, in which a thinner bit is normally held by springs. When the ordinary bit is gripped between the teeth of the horse a strong pull on the reins withdraws the thinner bit against the action of the springs and allows it to act as an ordinary bit. Helical springs or blade springs may be employed, and stops limit their extension.

- 737. Newton, A. V.,** [*Biechy, E.*]. March 21.
[Provisional protection only.]

Bridles; fastening.—The bridle reins are fastened to the lower extremities of the side cheeks of the bit and also to upper points on the side cheeks near to their points of connection with the bit, the upper fastenings being made by means of india-rubber or other elastic bands secured to the reins and to the side cheeks. The ordinary action is obtained through the upper elastic fastenings, but a strong pull for reining-in a restive or runaway horse extends these fastenings and is exerted on the bit through the lower fastenings also.

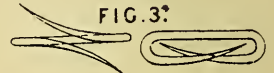
- 1136. McDonald, W.** May 8.

Saddles; stirrup straps; stirrups; saddle-bags.—A military saddle is made without a tree but with an iron gullet, and panels extending under the cantle. The seat is made in one piece of leather blocked to shape and attached to the knee flaps. Only one strap is used for each stirrup. Its lower end is fixed to a square bar passing through keyhole slots in the stirrup iron. The strap is shortened by lowering the bar into the round parts of the slots, turning it round, and replacing it. A loop at the upper end of the

strap is passed over a D-hook which drops into holes in two stud pins on the side of the gullet and forms also an attachment for the girth strap and breast straps. The girth is made wide and is divided for about a third of its length at each end into two straps one to fasten to the front and the other to the back of the saddle. The kit is carried in a loose flexible valise, which is placed over the entire front of the saddle and may carry horse-shoes &c. at its centre.

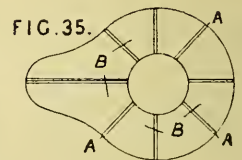
- 1234. Davey, S.** May 19.

Fastening.—A double hook of the form shown is provided with points or ends projecting approximately in opposite directions and adapted to pierce the material or to engage with eyelets.



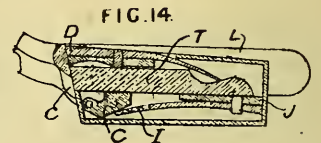
- 1318. Dufossé, E.** May 29.

Saddles.—Saddle seats are constructed upon a framework having horizontal channels for air currents. The channels are located between two boards *B*, Fig. 35. The boards have an aperture in the centre and may be separated by cross-pieces *A* forming radial partitions. Such frameworks may also be constructed of concentric metal hoops connected by spokes, or of rubber run into one piece, or pieces of rubber cloth &c. fastened together. The upholstered part, consisting of stuffing, springs, &c., may be placed on one or both sides of the framework which is affixed to the saddle.



- 1320. Gullick, T.** May 29.

Spurs and spur-carriers.—Spur-carriers are built up in boot heels. A plug *T*, Fig. 14, on the spur enters the opening *c* in a box *L* built into the heel, and is



held against a seating *J* by a spring *D*. When not in use, the opening is closed by a door *C* and spring *I*.

- 1362. Smith, W. W. H.** June 2. *Disclaimer.*

Bridles.—Leather for the blinkers of carriage harness is stamped out to the proper shape, steeped in water, and subjected to pressure between the heated and shaped dies of a screw or eccentric press.

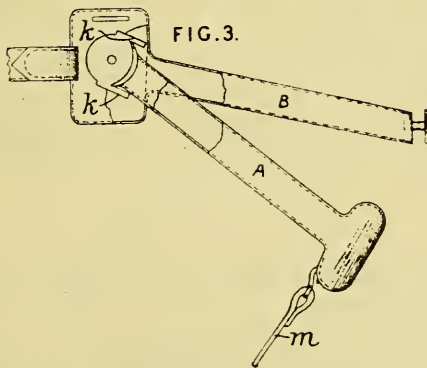
- 1519. Gedge, W. E.,** [Duchène, A.]. June 22. [Provisional protection only.]

Bridles; controlling restive animals; fastening; pads for.—Relates to means for covering the eyes of a horse in an emergency. In one form, an india-rubber or like veil is secured to the bridle so that, by pulling safety-reins which slide along the bridle, the veil is pulled down guide-rods over the eyes and is held down by the engagement of rings on hooks near the bottom of the guide-rods. In another form, an oval plate having "one oblique and three horizontal openings" is employed for each eye. A pull on the reins presses a spring which releases a tumbler and, "by tightening the counterpart, blinds the animal. An oval wire plate is riveted to a "spiral spring" and at the moment of release "forms hinge with the counterpart. The wire "piece must be padded, so as to exclude all light "from the eye." The reins are hollow and through them pass cords for re-adjusting the parts. For carriage harness, a pad adapted to cover the eye is riveted to a spring-pressed rod which passes through the blinker. The rod is normally held with the spring compressed by a tumbler which is withdrawn when the reins are pulled to release the rod.

- 1669. Walker, R.** July 11. [Provisional protection only.]

Bits; stopping and controlling runaway and restive animals; fastening reins. The rein is fastened on each side to the projecting end of the bit, and is connected by a short elastic piece to the cheek. A gentle pull acts only on the cheek of the bit, but, on the horse bolting, the resistance of the elastic piece is overcome and the rein acts with greater leverage on the end of the bar. In a modification, the rein is fastened to a lever pivoted to the end of the bar and connected to the cheek by a spring.

- 1881. Strada, E. A., Count de.** Aug. 3.

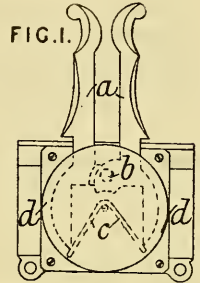


Stopping and controlling runaway and restive animals; bridles.—For stopping and controlling runaway or restive horses, the bridle is provided with a pair of pivoted levers A normally resting

upon the noseband B. If a rein *m* is pulled, the levers are brought down over the animal's nostrils. On releasing the rein, the levers are carried back to normal position by spiral springs on the pivots. The extent to which the levers may move is limited by arms *k*.

- 1912. Thornton, E. M.** Aug. 8.

Rein-holders.—A rein-holder consists of arms *a*, pivoted on a pin *b*, and partly enclosed in a cover *d*, the lower ends of which are pressed outwards by a spring *c*. The rein-holder may be attached to the dashboard or footboard of a vehicle, or to the saddle of a riding-horse.



- 1952. Orange, E. B.** Aug. 13. [Provisional protection only.]

Runaway horses, releasing.—In an arrangement for releasing runaway horses, each shaft is formed in two parts, connected together by bolting the back part in a sheath fixed to the front part. The traces are attached to the front parts, which are carried away from the vehicle by the horse when the bolts are withdrawn. The withdrawal of the bolts is effected by means of rods with rack and pinion and of a toothed sector actuated by a cord within reach of the driver. The shafts are sometimes adapted to be similarly separated from the cross-bar. In the case of two-horse carriages, the splinter-bars are released and carried off by the horses together with the pole chains.

- 2112. Allen, F.** Sept. 1. [Provisional protection only.]

Horse breaking and training harness.—In a dumb-jockey for use in breaking and training horses, an upright bar carried by an arch fitted to the horse has a vertically-adjustable cross-bar carrying two springs acting in the same manner as a man's hand on the animal's mouth. The springs may be brought together or separated at the option of the breaker.

- 2181. Kleinfelder, J. J. C., and Girardet, C.** Sept. 8. [Provisional protection only.]

Breeching; tugs, shaft; fastening.—The splinter-bar is made hollow and is provided with friction-rollers round which the traces are passed into the splinter-bar, where they are adjustably secured together by notched studs. The tugs are formed of hinged metal loops, which open to admit the shafts and which are normally secured by a divided pin. Straps "are secured at one end to

"the tug or saddle, and after passing through an eye or ring are fastened by the other end to the shafts, by which means increased play and ease is given, to the crupper or rump strap when backing or going down hill."

2249. Barnwell, S., and Rollason, A. Sept. 15.

Back and belly bands.—Compositions containing pyroxylin, oils, gums, resins, india-rubber and gutta-percha, salts, colours, and animal, mineral, and vegetable matters are used in solution to cement fabrics together for use as harness.

2661. Ghislin, T. G. Oct. 31. [*Provisional protection only.*]

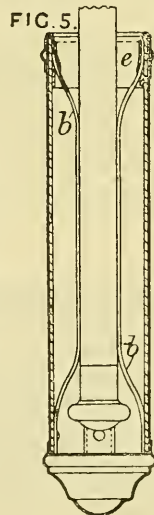
Whips and whip-sockets.—The marine plant *eiklonia buccinalis* is treated "by chemical and other processes" and used for whip-sockets and whip handles.

2691. Hinsbergh, J. H. M. van. Nov. 3. [*Provisional protection only.*]

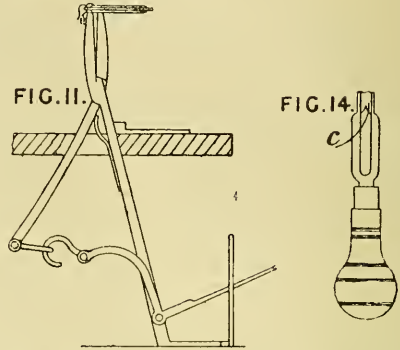
Stuffing-materials.—To enable "porks' wool" i.e. the mixed down and bristle "that certain porks of the northern countries possess," to be utilized for all kinds of stuffing, bedding, &c., it is rendered as elastic as horsehair and as flexible as wool by subjecting it to the following known processes: (1) washing, and, if necessary, scouring, (2) drying, (3) beating or carding, (4) spinning as curled horsehair is spun, (5) turning it to the shape of a corkscrew or of curled horsehair, (6) boiling for an hour or two in pure or slightly alumed water, and (7) drying. "Porks' wool" thus prepared can be sold cheaper than either horsehair or wool, for which it may be substituted or with which it may be mixed.

2717. Hewitt, W. Nov. 6.

Whip-sockets are provided with bow-shaped springs *b* which are covered with soft leather or like material. The springs are attached by stitching to a leather band *e*, and then inserted in the socket. They are riveted or stitched to the bottom of the socket, and are fixed at the top by stitching the band *e* to the socket.



2857. Myring, C. Nov. 21.



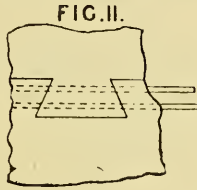
Harness furniture, making.—For manufacturing covered harness furniture, buckles, slides, rings, and like articles, the leather is pressed on the metal form, polished, stitched, and pared off round the edges. The covering-leather, pasted wet over the metal form, is pressed round the metal in dies. The buckle or other article, partially dried, is then pressed in steam-heated dies, whereby the leather is polished and hardened, oil being used to preserve its nature. The buckle, now dry, is dyed or blacked and removed to a polishing-apparatus, consisting of a pivoted lever carrying a leather pad which is rubbed horizontally over the buckle. Polishing is completed by again passing through the dies, when the buckle is then ready for sewing. This is effected in a modification of the machine known as Simpson's Patent. After the sewing operation, the silk or thread is tied or fastened off in the apparatus shown in Fig. 11, in which the buckle is held by a pair of clamps worked by a treadle and opened by a spring between the jaws. The beaks of the jaws clip the bar of the buckle at the part left uncovered for the tongue. The treadle being secured in a rack, the thread on the top side of the buckle is pulled through to the underside and tied. The superfluous leather is removed by the tool shown in Fig. 14, which is grasped by hand and drawn round the edge of the article, slipped over a rotating mandrel. The cutter *c* is hollowed to somewhat the form of the blank, so that it cannot injure the stitching. In lieu of using this tool, the buckle may be placed in dies furnished with cutting-edges. After the edge has been smoothed, coloured, and rubbed upon soft cotton print, the tongue, in the case of a buckle, is attached by means of a press.

2863. Lovick, W. F. Nov. 22. [*Provisional protection only.*]

Bits.—A second mouth bar or bit is placed two or three inches below the ordinary bit, and the rings to which the reins are attached are connected to the side bars of the snaffle at points between the ends of the two mouth bits, so that the upper mouth bit serves as a pivot for the lower bit and the side bars.

3163. Desborough, S., and Middleton, S.
Dec. 26.

Whips; whip-sockets.—Handles and sockets for whips are made by dovetailing the edges of the leather, as shown in Fig. 11, inserting wire, whalebone, or like strips, and filling up the joints with rubber



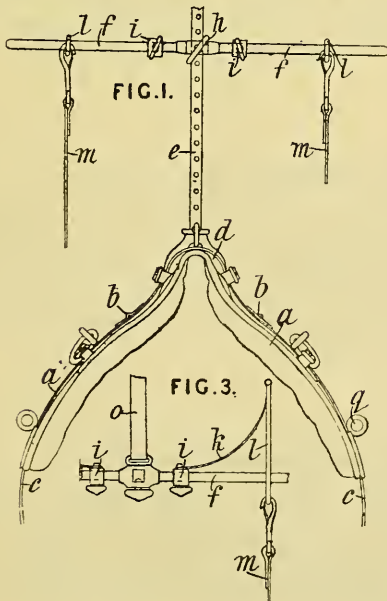
solution, shellac, or the like. A method of piercing leather edgewise is described in Specification No. 378, A.D. 1858. Leather may be used which has been tanned without removing the hair, the latter being pressed flat and coated with rubber solution or the like. This process may be applied to handles made from tails as described in Specification No. 2578, A.D. 1856.

A.D. 1861.

13. Stevens, C., [Marque, L.] Jan. 3.
[Provisional protection only.]

Stopping and controlling runaway and restive animals.—A device for stopping runaway horses consists of a spring muzzle, of steel covered with leather, which is supported by a forked piece extending down the forehead of the animal, and has an oval-shaped member adapted to seize the horse's nostrils when operated by a cord or hand attached to a ring on the pommel of the saddle. A martingale connects the muzzle with the girth. In the case of carriage horses, this device may be supplemented by adapting the blinkers to be drawn over the animal's eyes when two crossed straps are operated by the driver, or the latter arrangement may be used separately.

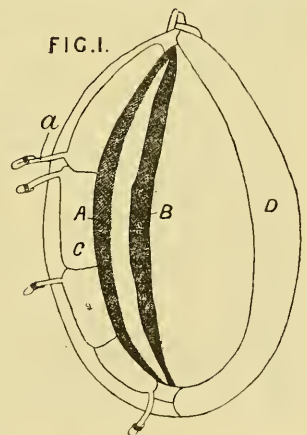
173. Henderson, R. Jan. 22.



Horse breaking and training harness.—In a dumb-jockey for breaking and training horses, a metal clamp or frame *a* is hinged at *b*, furnished with girths *c*, and padded on the inside. The upper portion *d* of the frame is arched in order to prevent the apparatus from pressing on the horse's spine. A transverse bar *f* is adjustably fixed on a vertical bar *e* by a set-screw *h*. Slides *i*, furnished with springs *k* and shackles *l*, are adjustably fixed on the bar *f*, and constitute the "hands" of the jockey. Upper reins *m* are attached to the shackles *l*, and may, if desired, be brought close up to the bar *e* by reversing the position of the slides *i* on the bar *f*. A crupper *o* is attached to the bar *f*, or to the frame *a* or some other portion of the jockey. Lower reins are attached to the frame *a* at *q*.

458. Stevens, C., [Beanjouan, A.] Feb. 23.

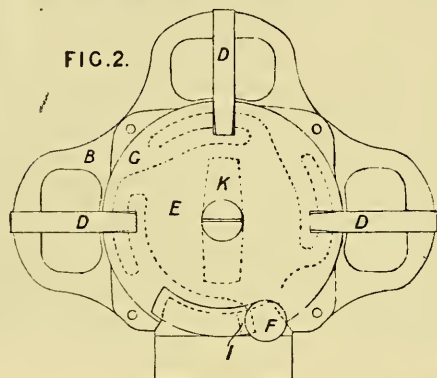
Collars, neck.—Relates to an elastic collar provided with a rubber air cushion *C*, in addition to the ordinary pads. The air is introduced through tubes *a*, which are closed by tying their ends round flat pieces of wood, bone, or the like. The cushion is covered with canvas or other material *A*, and may have a second leather cover in addition to the outside covering *B*. Its division into separate compartments permits of the collar being opened at the bottom, but it may consist of a single chamber. The finished collar is shown at *D*. The Provisional Specification states that the leather cover is laced on the outer side.



- 517. Newton, T.** Feb. 28. [*Provisional protection only.*]

Saddles; saddle-bags; saddle cloths; small-arms, attaching.—Holsters and valises are fastened to saddles by plugs fitting into sockets, those for the holsters being preferably in forward projections of the stirrup bars. The holsters are further secured by india-rubber rings round them, which are connected by a chain or other metal coupling. A leather strap is also passed through slits in the holster and saddle, which strap also fastens the panels. A strap connected to the holsters is carried back under the saddle and buckled to another strap fastened to the valise or its plug. The pair of holsters and the valise are each fitted with a separate flounce, which does not extend over the seat of the saddle. The numnah and shabrague are made in one piece.

- 605. Tomlinson, J.** March 12.



Fastening.—A buckle fastening for harness and saddlery and other purposes is adapted to be operated by the rider or driver. The loops for the traces or other straps project from the edge of a plate B, and the tongues D, hinged on the outer parts of the loops, have a hole engaged by the point of a bolt on a pivoted plate E. This plate carries a stud F, which projects through a slot in a covering-plate G and catches upon a lip I on the loop plate. A spring K is interposed between the plates G, E. On pulling a rein attached to the stud, the bolt plate is drawn partly round, and the traces are released. When used as a draw-plate, it is hinged, swivelled, or strapped to the shaft. In double harness, four buckle loops and bolts are used, the back and belly bands being attached to two opposite loops, and the traces to the other two. For a pole, two strap loops are provided perpendicular to the plate.

- 853. Ghislin, T. G.** April 6. [*Letters Patent void for want of Final Specification.*]

Whips and whip-sockets.—The marine plant, *eiklonia buccinalis* is used for manufacturing, coating, or ornamenting whip-sockets and whip handles.

- 869. Gill, C.** April 9. [*Provisional protection only.*]

Fastening.—The passage to the interior of a hook is closed by a part jointed by a pin to the stem. The end of this part has an arm which, when closed, passes through a hole in the end of the hook, crosses the loop, and enters a recess in the opposite side, where it is retained by a spring or split in the arm and by recesses which act as catches. The closing-piece and cross-bar may be made to move inwards, and be acted upon by a spiral spring. The ring is formed with a cap or socket. The stem of the hook has a fixed collar or head and a loose collar. The fixed collar is placed within the cap and the loose collar is secured to the cap by pins, soldering, &c.

- 1018. Lecot, E.,** [*Carbonino, R. M. V. C., Veuve de Favre*]. April 24. [*Provisional protection only.*]

Nosebags.—A nosebag for horses is formed at the bottom with one or two twine nets for sifting the food and for allowing the saliva to flow away. Two oval apertures covered with similar netting are also formed near the middle of the bag to permit free respiration.

- 1073. Desplas, J. B. H.** April 29. [*Provisional protection only.*]

Knee-caps; horse-boots; elbow pads.—Bands for protecting the knees, legs, or fetlocks of horses are made of elastic sheeting composed of india-rubber and gutta-percha vulcanized. The edges are made of double or triple thickness. The bands are coloured to suit the colour of the animal.

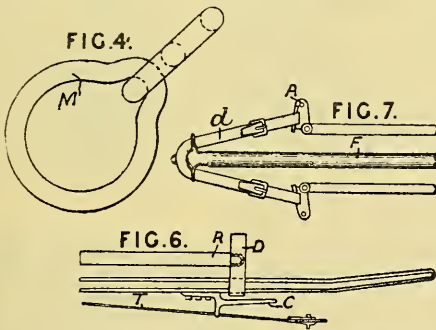
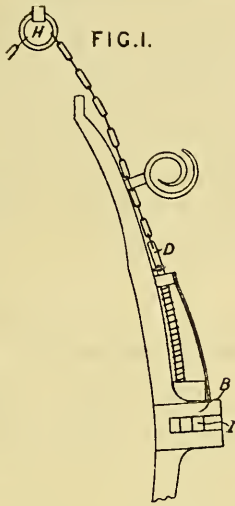
- 1075. Johnson, W.** April 29.

Saddles; materials.—Sheet metal, such as sheet steel, is cut to the proper shape, and is bent or otherwise embossed into a single splayed bridge or arch of the form of a saddle-tree. The saddle-tree may be constructed from one strip or more of sheet metal, and may be covered with leather, padded, and stuffed.

- 1102. Glatard, L.** May 2.

Collars, neck; runaway horses, releasing; stopping runaway animals; fastening; tugs, shaft.—In an arrangement for releasing runaway horses, the traces terminate in plates which are held between lugs B on the collar by pins I, on spring-controlled rods D, which pass

through holes in the plates. The rods are connected by chains to a ring H, from which a rein proceeds to the driver so that it can be pulled to release the horse. The chains may pass over pulleys in a box screwed to the collar, in which case they are connected to a metal band to which the rein is attached. Traces are sometimes dispensed with, the shafts passing through rings M, Fig. 4, in which they are secured by pins. The rings carry plates which are attached to the collar by the pins I. The shafts may slide in hooks or rings on the backband D, Fig. 6, which bears against a stop C and carries the breeching R and the bellyband. The trace T, terminates in a T-shaped plate, and is sustained by a ring when the horse is released. In two-horse vehicles, the traces are connected, through loops on plates A, Fig. 7, to a chain or band d carried by rings in a socket at the end of the pole F, so that, when the plates A are



released from the collar, they are held up, the horses carrying away all the harness and half of the reins. A long cord connected to the bit winds on a drum on the vehicle to stop the horse after it has been released. The adjustable straps supporting the breeching pass through a slotted angle-piece riveted to the breeching-strap.

1157. Pickett, J. May 8. [*Provisional protection only.*]

Whips.—The handles of whips are ornamented by being coated with a strong adhesive varnish and then dusted over with flock. The flock may be dusted on, either in one operation or in separate differently-coloured portions at a time so as to produce any desired pattern. The handle or stick may also receive a pattern in relief by pressure in a die before or after being coated. Braiding or plaiting machines may be

employed to weave ornamental effects on the finished sticks in wire, silk, or whalebone. A gilt pattern is produced by heating a stamp or roller die, passing it over a leather pad on which is spread metal leaf or bronze powder, and then pressing the die on to the coated stick. The finished article may be sized and varnished to resemble leather, or may be ornamented by having attached to it patterns in metal or velvet.

1203. Swindells, H. May 11. [*Provisional protection only.*]

Collars, neck.—The collar is moulded to form gutters, and the rib at the edge of the housing is lengthened, so that rain which falls on the collar is conducted away to fall clear of the horse. The sides and back of the housing are made in one piece. The harness straps are attached to the inside of the collar. The stuffed part is attached to the inside of the collar instead of to the facing, in order to facilitate repairs.

1451. Cole, R. L. June 7. [*Provisional protection only.*]

Currycombs.—A brushing-surface, to take the place of a currycomb and a brush for horses and cattle, is formed as a glove from a fabric having a coco-nut fibre pile. The fibre is woven into a foundation composed of strands of hemp interlaced by weft threads, so disposed as to secure the tufts of coco-nut fibre in position. The glove is lined with cotton, which is continued beyond one edge to form a thumb-piece. The back and front being alike, the glove may be used on either hand indifferently.

1624. Stevens, C., [*Marque, L.*] June 25.

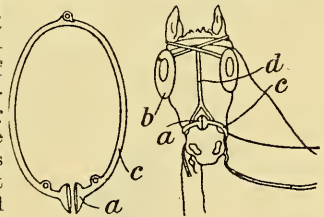
Bridles; stopping and controlling run-away and restive animals.—

For the purpose of stopping a run-away horse, a spring is adapted to be pressed on its nostrils to prevent breathing, and blinkers can be closed over its eyes.

A steel spring c, covered with leather, is opened, and the oval pieces a pressed on the animal's nostrils, by pulling a strap attached to a ring at the back of the spring. The strap after passing the collar, may enter the right rein, which is made round to receive it. The strap terminates in a ring within reach of the driver's hand. In the case of riding-horses, the strap is attached to the pommel of the saddle. A martingale may be fastened to the girth and to the ring on the spring. The spring is supported by a strap d. The blinkers b are provided with rings

FIG. 11.

FIG. 18.



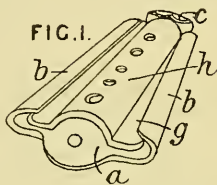
to which straps are attached. The straps cross over the horse's head, and are united at the collar to a rein which passes to the driver.

1660. Eagle, R. N. June 29. [*Provisional protection only.*]

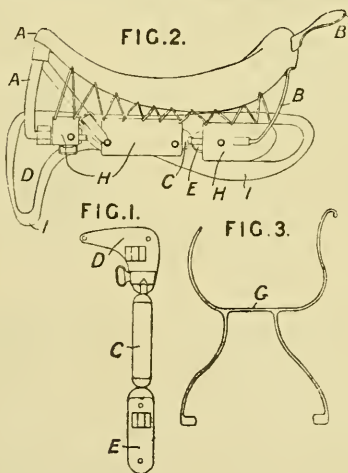
Stirrups are suspended, so as to incline the tread upwards towards the horse, by a loop with an adjusting-screw attached to the stirrup. The suspending-eye of the stirrup is set at an angle, to prevent the strap from twisting, the horizontal axis of suspension being parallel to a diagonal line crossing the foot from the little toe to the instep.

2177. Jones, J. Aug. 31.

Fastening. — The fastening is formed in two portions, secured by sewing, eyeletting, &c., to the two parts to be secured. One part consists of a flat plate *a* with the edges bent up to form wedge-shaped recesses *b*, and with the narrower end bent up to form a stop *c*. The other part is formed with flat tapered sides *g* to engage with the wedge-shaped recesses, and its central portion is raised as at *h*.



2244. Birkbeck, G. H., [*Friese, L.*]. Sept. 7.

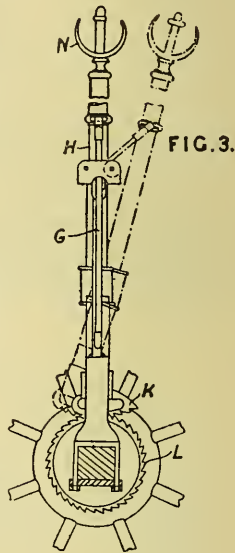


Saddles.—The frame of a flexible saddle consists of jointed metal plates *D*, *C*, *E*, to which are jointed metal bridge-pieces *A*, *B* for supporting

the seat. The joints are of any form which permit free and independent movement of the parts. The saddle girth is attached to leathers *H*, and is fastened on the horse by means which prevent the buckles from chafing the animal's sides. The side leathers *I* are lined with felt. The improvements are applicable to all kinds of saddles, ladies' saddles having the front bridge-piece of the curved form *G*. Saddles so constructed readily adjust themselves to the back of any animal, and permit baggage or a knapsack to be conveniently placed thereon.

2272. Davis, W. Sept. 13.

Rein - holders. — In order to prevent an affrighted horse from starting off with a vehicle in the absence of the driver, the reins are attached to a holder *N* at the upper end of a lever *H*, at the lower end of which is a movable segment *K* which the driver, when he leaves the vehicle, puts into gear with a toothed ring *L* fixed to the wheel hub. If the horse moves forwards, the revolution of the wheel causes the upper end of the lever to move backwards and pull in the reins. When the horse moves back, the pull on the reins is released by a flexible spring *G* or by a coiled or other spring. The toothed segment *K* is carried by a stem telescoping into the hollow lever *H* and capable of being moved up or down by a thumb-piece. In a modification, the toothed segment *K* and ring *L* are dispensed with, the lever being acted upon directly by studs projecting laterally from a plate fixed to the wheel hub.



2482. Ghislin, T. G. Oct. 4.

Whips.—Materials for whip handles are made as follows:—Marine plants of the genera *eikonia*, *laminaria*, *duvillaea*, *sarcophycus*, &c. are immersed in successive baths of hot calcium hydrate, dilute sulphuric acid, and sodium carbonate, and finally washed. When half dry, the material is shaped to the required form. Sheets are made by opening out the tubular plants and drying under pressure. Alternatively, the plants may be steeped successively in potassium carbonate, dilute nitric acid, and naphtha, and dried. Thus prepared, the substance is softened by the action of steam or by immersion in sodium-car-

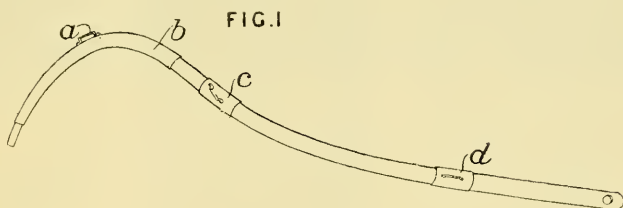
bonate solution, and placed in moulds, in which it may be immersed in lead-nitrate solution. According to another method of preparation, the material is steeped in slightly alkaline hot water, stamped, embossed, pressed, or pierced, as required, and hardened by immersion in lead-nitrate solution, and then, if necessary, in a hot solution of alum or aluminium sulphate. In another method, the material is steeped in warm dilute sulphuric acid, and then in a solution of mercuric chloride, lead nitrate, or alum. It is then dried and steeped in a mixture of alcohol, methylated spirit, or wood spirit, linseed oil, rosin, gum "thirsk," or asphalt, and turpentine, shellac, and sandarac. The substance is then again dried, softened by steam, and pressed. The product may be bleached by treating it successively with sodium carbonate, sulphurous acid, chloride of lime, and chlorine, and may then be dyed or varnished.

2539. English, A. Oct. 10. *Drawings to Specification.*

Preventing horses from falling.—To prevent harness horses from falling, a strap attached to the saddle girth passes up between the fore legs and then divides, each part passing through an eye and a ring on the collar, through the terrets, and below the upper bar of the dashboard to a point below the cushions of the seat, where it is fixed to straps secured by chains to the axle, or continued below the axle to the back of the dog-cart or other vehicle. For four-wheeled vehicles, the straps may pass round a roller under the seat, where they terminate. Short connected branch straps are provided, to be held by driving or to be seized when necessary. In some cases, the straps may be led through eyes on the breeching or other parts of the harness, and through eyes and slots in the carriage.

2771. Ashley, J. Nov. 4.

Harnessing, systems of.—The shafts of single or pair horse or four-in-hand carriages, and of dogcarts, are foreshortened, terminating at the horses' waists, and the bellyband is attached to loops *a* on the point leathers *b*, and is placed before the backband tugs, which are looped to the back part of the point leather, so that, on descending a hill or stopping, they ease back and relieve the horses. The breeching is attached to the loops *c*, which are placed back far enough to give play to the backband tugs. The breeching is passed through the



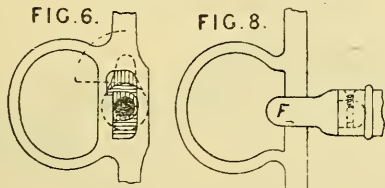
kicking-strap, which is attached to the loops *d*. For light vehicles, the breeching may be omitted.

2889. Naish, W. Nov. 16. [*Provisional protection only.*]

Saddle cloths or numnahs are cut from felt or felted cloth and covered with woollen cloth.

This may be effected also by having a sleeve over the ring stems, which are screwed together. The mouthpieces may be made hollow in the same manner as gun barrels, or they may be made of gas tubing case-hardened.

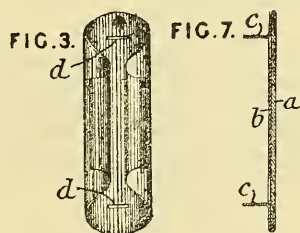
2891. Hawkins, J. Nov. 18.

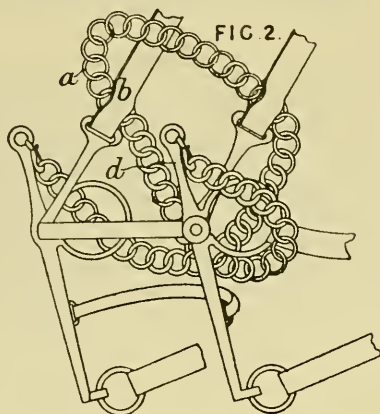


Bits have the mouthpieces fitted so as to slide up and down in the cheeks and to revolve. The mouthpiece, which may be of any form, has a narrowed neck working in a slot in the cheek; if it has a bow, a quarter turn only is allowed by shaping the neck as shown in Fig. 6. The mouth bar may be attached to rings *F*, Fig. 8, sliding on the cheek, by screws engaging in grooves in the ring stems which allow the mouthpiece to revolve.

3001. Carpenter, S. A. Nov. 28.

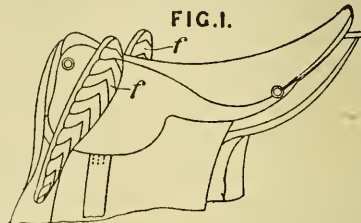
Whips; labels, name plates, and the like, attaching.—A label, Fig. 7, consisting of a plate *a* on which may be written the name and address, is fixed in a frame *b* and fastened to the convex side of a tubular spring clip, Fig. 3, by projecting tongues *c* which are passed through slots *d* and turned over. The clip may then be sprung over a whip handle. The part *b* may also be attached to the clip by soldering and a photograph inserted instead of the part *a*.



3113. Lightfoot, W. Dec. 12.

Bridles; stopping and controlling runaway and restive animals.—A chain to close the horse's mouth passes round the nose and chin, and is attached to the cheek bars of the bit. The chain *a*, Fig. 2, attached to the end of one of the cheek bars *d*, which swivel on the mouth bar, passes under the chin, through a metallic loop *b* in the opposite cheek strap, over the nose, and through a

similar loop in the other strap, and is fixed to the end of the second cheek bar. A plate or strap may be used instead of the chain.

3274. Hughes, E. T., [Peck, J. B., and Peck, T. B.]. Dec. 31.

Saddles.—Padded stops *f* are attached by metal bands to the wooden frame of the saddle and to the saddle-tree, so as to overhang the rider's legs and prevent him from being unseated. The stops *f* are placed sufficiently far apart to prevent injury to the rider if he is thrown forwards. The stops also serve as a support for the holsters of a military saddle.

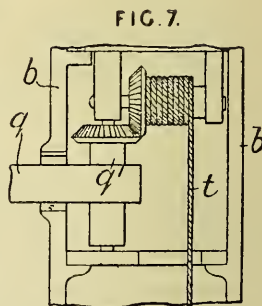
A.D. 1862.

101. Carter, J. Jan. 14. [Provisional protection only.]

Tugs, shaft; fastening.—A shaft tug is made in two parts, hinged together by a knuckle hinge, and secured by a brass or other latch which engages a catch placed close to the buckle by which the tug is attached to the backband. The shaft is inserted in the tug, the backband not being passed round the shaft.

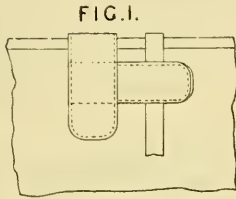
337. Carrington, J. Feb. 8.

Training and breaking-in horses.—The object is to accustom young horses to the bit. The posts *b* of the stalls of stables are made hollow, and each side of the bit is attached to a strip of webbing *q* passing over the roller *q'*. When the webbing *q* is pulled, a weight attached to the rope *t* offers the necessary resistance.

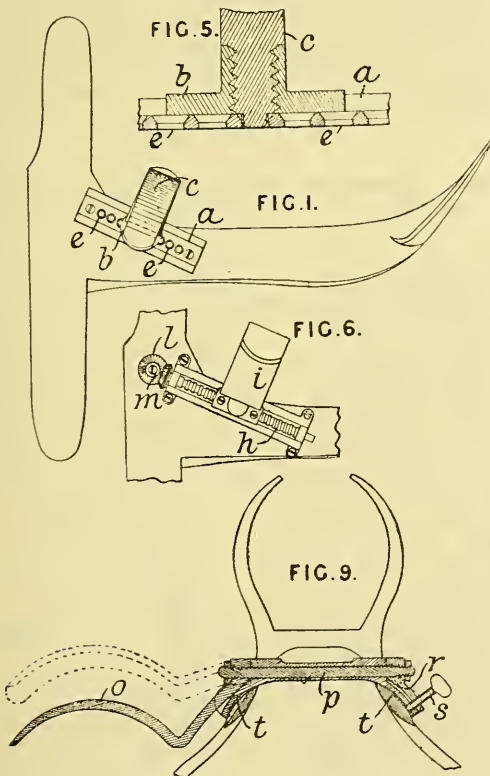


380. Hewitt, W. Feb. 13.

Rein - holders. — A clip of steel or similar material fits on the dashboard of the vehicle and to this clip is attached one end of a spring tongue. A block on the underside of the spring bears normally against the dashboard, and the reins are held between this block and the dashboard. In a modification, the block is omitted. The rein-holder may be covered with leather, or it may be japanned, painted, or otherwise ornamented. In another modification, the spring tongue overlaps but does not extend beyond the clip, and then the reins are held between the tongue and the clip. The clip may be replaced by a plate fixed to the dashboard by screws, sewing, or otherwise.



461. Ward, H. Feb. 21.



Saddles.—The third or leaping crutch of ladies' saddles is made detachable and adjustable. The crutch *c*, Fig. 1, is connected to its sliding base *b* by a screwed shank, which passes through the base, as shown in Fig. 5, and enters anyone of the holes *e* in the guide-plate *a*. In a modification, the base is fitted with a concave screw working on a screwed spindle *h*, Fig. 6, which is rotated, in order to adjust the crutch *i*, by bevel gearing *l* connecting it to a spindle *m* passing transversely

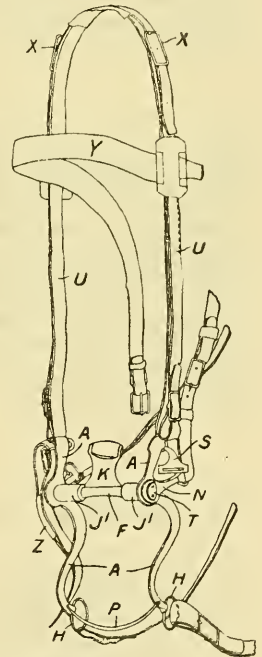
through the saddle-tree and terminating in a handle. In another modification, the crutch *o*, Fig. 9, is attached to either end of the spindle *p*, and is secured in any desired position by a screw *s* in an arm *r* on the other end of the spindle, which screw enters one of several holes in the plate *t*.

466. Krasuski, J. Feb. 21. [Provisional protection only.]

Controlling restive animals.—The motion of the fore or hind legs is restricted by operating a ligature placed above the hocks. The ligature is attached to a cord, chain, or strap, which is tightened by a hand winch, or it is attached to a hand rein which when slackened allows it to drop from an inoperative to an operative position. Horses harnessed together have an adjacent pair of legs connected. The winch may tighten a cord connected to the bit.

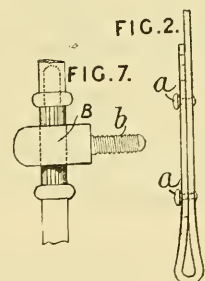
573. Rémond, P. March 3.

Bits ; bridles and halters. — The mouth bar *F*, having rollers *J*¹ and a tongue guide *K* fitted with a roller fits in square holes in the curved cheek bars *A* and in plates *N*, to which the snaffle reins are attached, and is held by screws *T*. The cheek bars are held in position by a curved bar *P* and are attached to the curb reins by rings *H*, and at the upper end to the cheek bands *U* adjustable in length by means of buckles *X*. The curbs *Z* are of leather and attached to holders *S* hooked to the cheek bars at the top. The fillet *Y* passes through scutcheons on the cheek straps and forms a throat band.



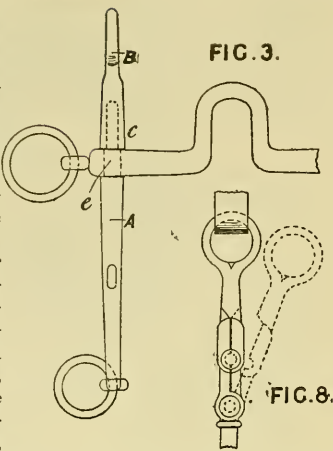
607. Shipley, J. G. March 7.

Bridles ; bits.—The cheeks of bits are made in two parts to allow different mouth-pieces to be fitted to them, and the cheek straps which connect the bridle head and reins to the bit are fastened by buttons *a* instead of buckles



or sewing. The part A of the bit, Fig. 3, has a square shank, and a projection c which screws in the part B. The shank e may be round and elongated to allow the mouthpiece to slide up or down on it. Detachable mouthpieces are sometimes provided with tapped ends, which engage oppositely-threaded screws b, Fig. 7, on pieces B

carried by the cheeks. Instead of the screws b, plain pins may be inserted in holes in the mouthpieces, and held by pins or screws. Fig. 8 shows a mouthpiece detachably secured by making the cheek piece in two parts pivoted together.

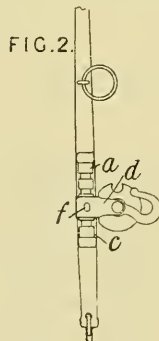


745. Mennons, M. A. F., [Durand, A.].
March 18. *Drawings to Specification.*

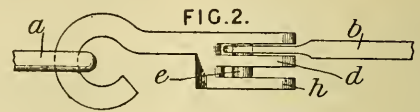
Stopping and controlling runaway and restive animals.—Electric shocks from an induction coil are applied by the rider or driver to the animal's head. The coil is inserted in the saddle frame, or lodged on the fore part of the carriage, and is connected by wires inserted in the reins to moistened sponges, which are attached to the bridle so as to press against the head at a short distance below the eyes.

794. Marsh, T. March 22.

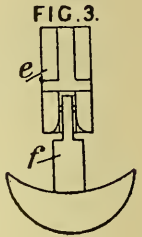
Collars, neck, hames for. The draught-hook d can be adjusted vertically on the axis of the staple a, c of the hames; it is fixed, after adjustment, by a set-screw f engaging in any one of a series of a series of grooves in the axis. Instead of the screw f, a pin may be fixed to a spring plate on the hook, to engage in the grooves; or a fixed pin or screw, such as f, may engage with the grooves by means of a bayonet-joint arrangement.



894. Lord, W. B., and Gilbert, F. H.
March 31.

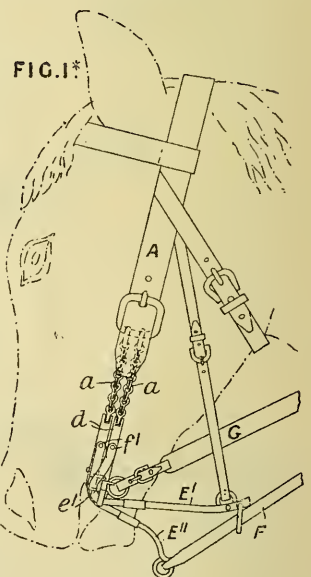


Fastening traces, hooks and slipping-devices for. To enable the traces to be readily freed from the hames if a horse falls, the trace b is secured to the frame a by a hook of the form shown in Fig. 2. The pin e can be readily drawn out to release the trace; it is held in position by a drop-down end f, Fig. 3, which, when the pin is in place, hangs vertically in the space between the cheeks d and h of the hook. To release the pin, it is rotated through a right-angle, when the stem of the end f will have been brought into coincidence with an open slot in the cheek h, and can then be turned outwards through the slot into alignment with the pin e, which can then be pulled out. Stops limit the turning and sliding of the pin.

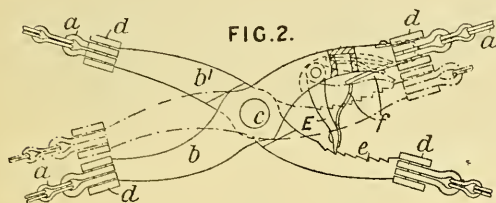


928. Newton, A. V., [Weymouth, A. L.].
April 2.

Bits; horse breaking and training harness; stopping and controlling runaway and restive animals.—The bit is formed of two bars b b' pivoted together centrally by a pin c so that they may expand and distend the mouth of the animal. It may be used with an ordinary bit, or separately. The ends of the bars are bent at right-angles to form rings d which are connected by chains a to a head strap. On the bar b', Fig. 2, is formed a rack e into which a pawl E, centered on the bar b, engages and is kept in position by springs f. The bit is closed when being fitted into the mouth of the animal in front of the ordinary bit, but as soon as the animal opens its jaws the bit expands and is held open as shown. In a modification, the bit is used without an ordinary bit and a lever attachment is employed to expand it. Two bent



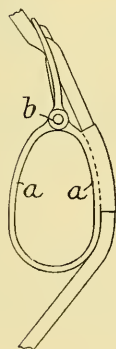
levers E^1 , E^{11} , Fig. 1*, pivoted together at their bends by a pin e^1 , are connected as shown at f^1 to the parts d of the bit and are controlled by an extra rein. In a modification, the levers are in two parts so that the part e^1 , f^1 is permanently fixed to the bit, whilst the back part of the lever



is detachable. The part E^1 is held in position by a strap. The reins G , attached to the bars b , b^1 at opposite ends of the bit, are used when the device is to act as an ordinary bit. By pulling the reins F attached to the ring-shaped ends of the levers E^{11} , the bars b , b^1 expand and distend the mouth of the animal.

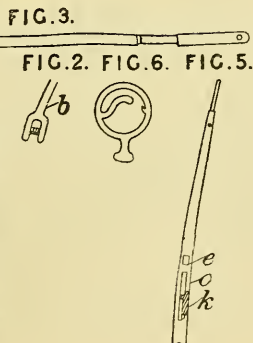
1176. Holden, L. April 23. [Provisional protection only.]

Tugs, shaft; fastening; saddles.—The shaft tug a is made of iron covered with leather or other material, instead of being made of leather only as is usual. The buckle, used to fasten the tug to the strap which passes over the saddle, is fitted to the tug by means of a pin b , so that it can be easily renewed. The saddles of draught animals are formed of metal or covered metal, instead of leather only.



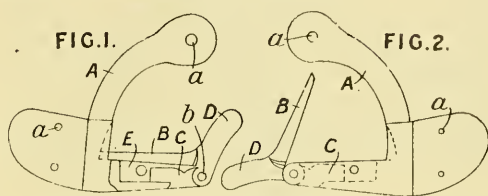
1277. Carter, J. M. April 30.

Collars, neck; tugs, shaft; saddles; terrets; fastening.—The hook on the front end of the shaft, Fig. 3, enters an eye b on the hame and is normally prevented from leaving the eye by the position assumed by the hinged extremity of



the hook. The shaft has a slot o into which the shaft tug can be engaged after the hinged piece k has been opened. To hold the shafts in position, the surcingle is attached to the under part of each tug, and the straps are buckled together under the horse. The straps which support the traces in double harness move in a groove in the cushion of the pad or saddle, the upper ends of the straps being provided with bars which prevent disengagement of the straps. Twisting of the reins when in use is prevented by passing them through the narrow upper part of the terret shown in Fig. 6.

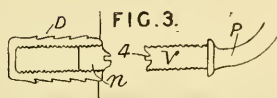
1351. Greaves, W. May 6.



Stirrup straps, suspending.—Consists of a safety stirrup bar for releasing the stirrup straps when the rider is thrown and hung on the stirrup iron. The bracket A , curved to obviate the necessity of the usual top piece, is riveted to the saddle-tree at a . The piece B , D , hinged at b to the part C , is held in the position shown in Fig. 1 by the spring E , its inner end engaging in a slot in the part A . If any extraordinary strain of the stirrup strap against the wing D occurs, the part B will be raised to the position shown in Fig. 2, and the strap will then slip over the part D .

1612. Boisset, P., and Antognini, B. May 29.

Spurs and spur-carriers.—A threaded box D is fitted in a rubber heel of a boot or shoe to engage with and hold a screw part n of a spur P .



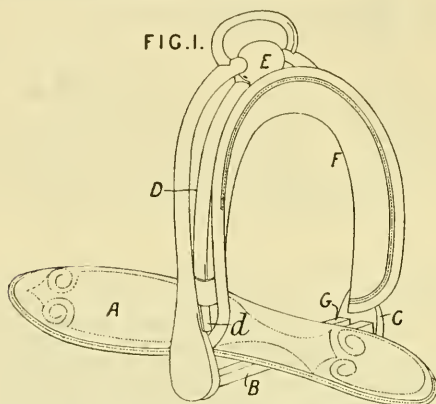
A screw stopper n prevents admission of dirt to the box. A projection 4 on the spur engages with a groove on the stopper, so that, in removing the spur, the stopper n is brought to the outer end of the box D .

1628. Léon, I. May 30. [Provisional protection only.]

Stopping and controlling runaway and restive animals.—The rein passes into a martingale with

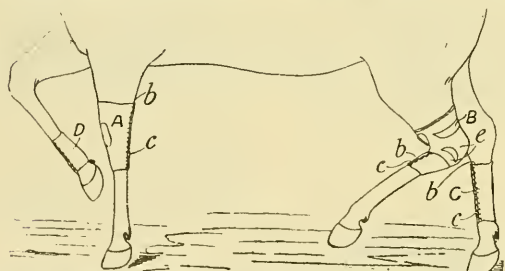
rings placed on each side of the collar, then through a ring on each side of the piston snaffle, rises under the animal's throat, and passes into two rings in the headstall. The horseman pulls the rein, which then tightens across the animal's throat. For horses harnessed to carriages, the rein passes through screw rings fixed to the seat. Those parts of the rein which pass through the rings may be round in section, and may work on rollers or small pulleys.

1735. Lennan, W. June 11.



Stirrups.—A stirrup for disengaging the rider's foot is shown in Fig. 1. The plate A, attached to a cross-bar B, which is pivoted in the arms C, rests in its normal position on a cross-bar G. The lower ends *d* of a swinging U-shaped pawl D pivoted at E in the frame C rest against the back of the frame. By depressing the back of the plate A by the heel, the plate swings upwards; the pawl D rises to allow the plate to pass and then drops to its former position, preventing the return of the plate A. The pawl is lined with padding F to protect the rider's foot.

1894. Mennons, M. A. F., [Wachter, L. R.], June 28.



Knee-caps; horse-boots.—Appliances for treating swellings and tumours on; the knees, houghs,

shanks, and fetlocks of horses, are made of caoutchouc or other suitable elastic material, and moulded to the exact form of the limb. The appliances are provided with thickened seams or ribs *b* in which the eyelets *c* are set. A series of projecting cushions corresponding with the hollows of the joint, are cast or otherwise formed within the envelopes or bandages A, B, C, D. The hough piece B may be provided with straps *e* for regulating the pressure. When made of caoutchouc or other impermeable material, perforations are provided for the escape of perspiration.

1968. Bourke, J. July 8. [Provisional protection only.]

Clothing for animals.—A cavalry valise, which when unrolled is used as a horse cloth, is formed of waterproof material, to one end of which two strips of material are secured by their ends and one long side, thus forming a wallet. The sides of the large piece are folded over and rolled up.

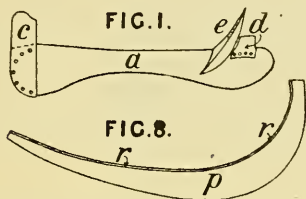
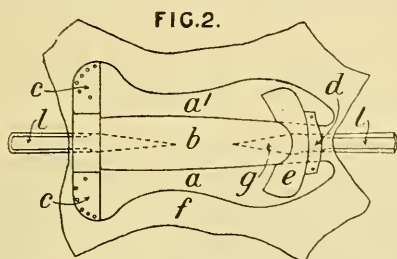
2647. Addison, J. Sept. 29. Drawings to Specification.

Tethering animals.—Consists in means for picketing horses. Two plates are sunk in pits, leaving some loose earth spread over the bottoms, and as much water is poured in as will cover the plates; the earth is thrown in and well beaten down. "By putting in the water a perfect vacuum is created, and consequently a perfect atmospheric pressure." A rope is attached to chains connected to the plate, and to this rope the horses are presumably tethered.

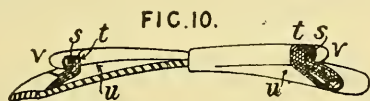
2648. Brooman, R. A., [Waltz, J. C.], Sept. 29.

Saddles; collars, neck.—The saddle-tree consists of thin wood side frames *a, a'*, Figs. 1 and 2, with a space *b* between them, connected at the front and back by curved pieces *c, d* and the back pommel *e*. A layer of damp leather is spread under the tree, and bulged out in the space *b*, by a curved expanding frame in which a wedge *l* is driven at each end, to the curved shape *g*. The leather is partially dried in a stove, then trimmed and sewed to the side frames, which, with the pommels, are covered with leather strips, and the drying is then completed. A metal bow is fixed across the head of the tree. Stirrup loops &c. and padding are then added. In making collars, Figs. 8 and 10, the leather *p* is shaped, as in the previous case, on a wood mould, which

may be built in sections, having a metal flange *r* secured to it. When the leather is dried, the mould is removed and the flange is maintained



rigid by having fixed, above and below, a wooden or metal bar *s* and a leather or wooden band *t*, respectively. A piece of wood *u*, fitted under the



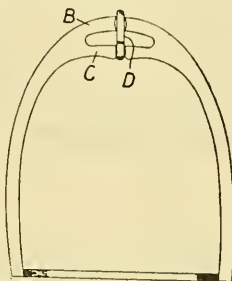
cheeks *v*, maintains the curve of the leather. The usual coverings of fabric and straw or other packing are used, and finally a leather cover is applied.

2794. R  mi  re, H. A. Oct. 16. *Drawings to Specification.*

Collars, necks; lining and padding; pads for.—Vulcanized india-rubber cushions or pads filled with uncompressed air are attached on the inside of horses' collars. An inner covering of some impermeable material, to protect the pads from sweat from the horse or dampness, is applied, and the usual leather covering then added. The vulcanized rubber preferred is made of a mixture of java rubber, flowers of sulphur, white zinc, chloride of calcium, and black lead; this is heated and mixed in the usual way, and finally heated to a temperature of from 50   to 60   R.; it is then ready to be moulded to the required shape, which is generally flat on the side nearer the straw of the collar, and round on the side nearer the animal. In order that the pad may still retain its form if pierced, it must not be distended by the air introduced; the hole is closed, and the moulds and contents are subjected to a temperature of from 150   to 200   R. for about two hours.

2871. Luke, G., and Luke, W. Oct. 25.

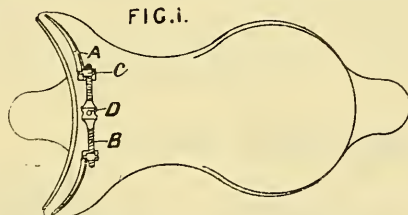
Stirrups.—The movable tongue *D*, fitted either on the bar *C* or the bar *B* of the stirrup eye, replaces the ordinary buckle of the stirrup leather, thereby allowing the use of single leathers. The tongue *D* acts as a buckle tongue for adjusting the length of the stirrup strap.



3173. Austin, W. Nov. 26. [*Provisional protection only.*]

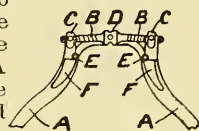
Saddles; materials.—Woven fabrics are coated with waterproof or other adhesive solutions, covered with paper or waterproofed paper pulp on one or both sides, and subjected to pressure in a hot or cold state. Instead of woven fabrics, fibres of various descriptions are mixed with pulp and laid between sheets of paper and waterproofed. The surfaces of the material may be lacquered and used for harness and saddles.

3473. Bonneville, H. A., [*Cogent, L.*], Dec. 30.



Saddles are made adjustable to suit horses of different sizes. Two nuts *c*, fitted to the upper ends of the angle-iron stays *A* riveted to the tree, are connected by a right and left hand screw *B*, so that, by turning the shoulder *D*, the nuts *c* are drawn together or forced apart, diminishing or increasing the span of the saddle. In ordinary saddles, the appliance is fixed behind the saddle bow, Fig. 1. For military saddles the nuts *c* are attached to iron bands fixed edgewise on the front arch of the saddle bow. In a modification for ladies' saddles, Fig. 5, strengthening-supports *F* and jointed stays *E* are added. The bow may be made of pine with the grain lengthwise of the saddle, covered with raw hide, and lined with walnut or other veneer, with its grain crosswise.

FIG. 5.



A.D. 1863.

462. Billingsley, C. Feb. 20.

Stirrup straps; fastening.—A single strap is used, and a metal plate with a pin replaces the usual buckle. The lower end of the single strap leather *a* is provided with holes, which take the stud *e* fixed in the metal plate *d* riveted to the strap. The loose end *f* is retained by the fixed or loose clip *g*. The upper end of the stirrup leather is secured by the loop *q* to the spring bar of the saddle, the use of several thicknesses of strap and a buckle being thus avoided. The plate and stud can be used for securing the kicking and crupper straps, or the traces and other parts of harness.

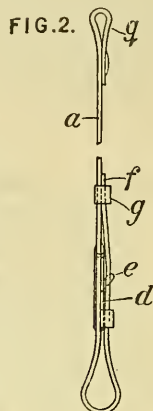
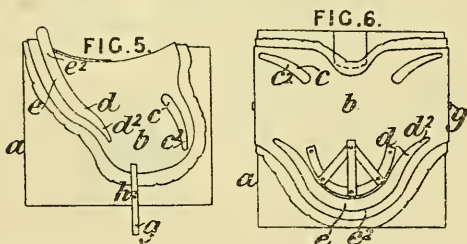


FIG. 6



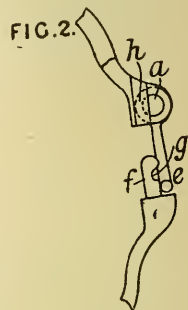
499. Clay, J. Feb. 24.



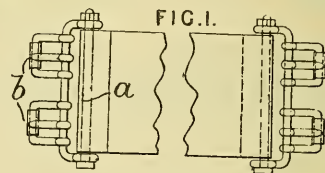
Saddles; pads for.—Upper leathers of saddles with pads and rolls are made by compressing one or more than one piece of wetted leather between moulds. The moulds are secured together by the strap *g* and pin *h*, the lower mould *a* having projections *c*, *d*, *e* and the upper one *b* having corresponding openings *c²*, *d²*, *e²* shaped to form the knee pads, thigh pads, and cantle rolls respectively. Stuffing-pads may be made in a similar pair of moulds. For ornamenting or embossing saddles, the moulds are provided with projections and openings of the required shape.

687. Johnson, J. H., [Gueldry, V.], March 13.

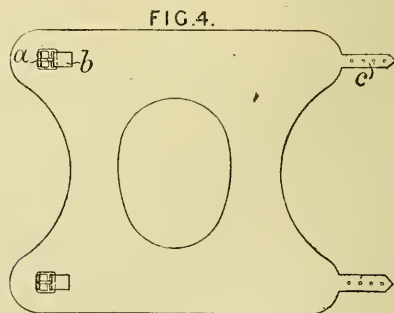
Fastening hames. In one of a pair of hames, two holes *a*, *h* are made at right-angles to each other and partially overlapping as shown. A pin fitting in *a* has a notch so formed that, when the ring *e* to which it is attached is in the position shown in Fig. 2, the stud *f* on the opposite hame can enter the hole *h*. In the stud *f* is a similar notch *g* into which the pin at *a* takes when the ring *c* is turned round through a right-angle. The martingale, passing through the ring *c*, prevents the fastening from becoming accidentally loosened.



730. Norrington, F. March 18.



Saddles; clothing for animals; knee-caps.—Saddle girths are formed of a strip of india-rubber or of india-rubber combined with cotton or woollen fabric. A buckle *a*, Fig. 1, is attached to each end, preferably by bending the ends of



the strip over to form loops before vulcanizing. The buckle carries smaller buckles *b*. Bands or rollers for horse clothing are made in a similar manner, the buckles being set back a little from the ends. Knee-caps are made of india-rubber, having the central part moulded thicker than the

rest, as shown in Fig. 4. Straps *c* are moulded on the rubber material and may be strengthened by canvas or other linings. The buckles *a* are held by loops *b* formed on the vulcanized rubber as described above.

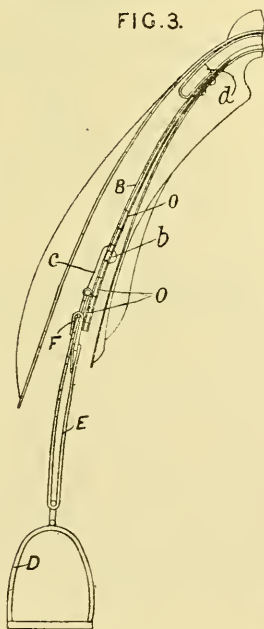
855. Stewart, A. April 4. [Provisional protection only.]

Lining and padding saddles.—The panel or stuffed portion of the saddle, which is applied next to the back of the horse, is made readily removable; it has fixed in it near its outer edge sockets or nuts to receive thumb-screws passing through the saddle-tree. Two of these screws at the front part of the saddle serve to receive cloak straps. If a crupper strap is used, then one of the screws is formed with a slotted head to receive the strap. The panel is removed for drying when required.

904. Newton, A. V., [Armengaud, J. E.] April 9.

Stirrup straps; stirrups; fastening.—

A metal band *B*, covered with leather, is attached to the bow of the saddle, and pierced with oval-shaped holes *o* into which is placed the button *b* of the loop *c* carrying the stirrup leather *E*. The stirrup *D* has an upper ring formed at right-angles to the stirrup arch, and the stirrup strap, after passing through the ring *d*, is fastened at any desired height by placing the hook *F* in one or other of the holes in the stirrup leather.



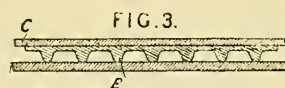
1142. Stanley, A. May 7. [Provisional protection only.]

Bridles.—Rosettes for head harness are covered with leather on one or both sides. The leather is

moulded, pressed, or embossed to the desired shape, and is secured by sewing round the edges. Central or other ornaments may be attached to the leather by wire shanks passed through the leather and metal and riveted or otherwise secured. The hollow portions of the embossed leather may be filled with any suitable plastic material.

1229. Browne, B., [Mayer, G.] May 16.

Collars, breast; collars, neck; saddles; ventilation.—Projections *B*, Fig. 3, are formed on elastic



sheets and the material is united to wood, metal, leather, or other material *C*, or simply placed between two substances and used for horse collars and saddles, thereby rendering the articles self-ventilating.

1452. Kain, J. F. June 11. [Provisional protection only.]

Whips.—A pasty, solid, or semi-solid perfuming-agent is inserted into the ends of a whip, and the opening is closed by a perforated cap.

1624. Marulaz, L. F. A., Baron. June 30. [Provisional protection only.]

Combs; currycombs.—A number of parallel plates, from which the teeth of the combs are to be cut, are arranged vertically in a mould, separated from one another by plates, the thickness of which is equal to the distance the teeth will be apart. These plates may be roughened, bent, or of different materials one from another, and their top edges are tongued. Over the tops of these plates a horizontal slotted plate is placed, the slots of which fit over the plates and then slotted ridges, which are to hold the teeth of the combs. In making ordinary combs, these ridges are placed at right-angles to the lengths of the plates, but if the teeth are to overlap, they will be placed at an angle. The plates are then removed from the mould, and the bottom of the plate placed in notches in another plate, so as to hold them in position. The ridges and teeth plates are then joined together by pouring on solder or the like, and the combs are separated by sawing across the teeth plates parallel to the ridges. For iron or steel combs, zinc may be used for joining, and thus the combs are galvanized at the same time. The combs, with overlapping teeth, may be used for combing animals or as currycombs.

1705. Davis, S., [*Romertze, H. T.*]. July 9.
[Provisional protection only.]

Bits; bridles; stopping and controlling runaway and restive animals.—The side cheeks of the bit are fitted with projecting arms shaped to conform to the cheekbone of the animal. The lower ends of the cheekpieces are connected by the bottom bar of the bit, which is capable of springing when the side cheeks are acted on by pulling the reins or snaffle. To the inside of each cheekpiece is fixed one end of a rod; these rods form the mouthpiece of the bit; the other end of each passes through a suitably-shaped slot in the opposite cheekpiece and has a ring attached to which the rein or snaffle is fixed. By pulling one or both reins, the animal is directed or checked. The projecting arms are encased in an adjustable strap encircling the animal's nose.

1756. Oppermann, C. July 14. [*Provisional protection only.*]

Fastening.—The object is to facilitate the connection of horses to, and their disconnection from, vehicles. When shafts are used, the traces are retained by hooks or studs. The hooks are sometimes adapted to rotate, and are retained in position by a spring lever and stop. Another stop prevents the traces from slipping off the hook. In the case of poles, the pole chain is connected to the pole by passing it over a stud and securing it there by a sliding plate, which can be held in position by a screw or catch. Or the hooks or studs on the pole may be adapted to turn to allow of the chains dropping off, in which case they would be retained in position by a catch. This arrangement may also be employed to connect the pole chain or strap to the collar. Another hook is formed in two parts, or has two hooks bent in opposite directions. When closed, the points of the hooks overlap one another, and are secured in this position by a screw or sliding cap. In a further modification, a hook or holder has a limb to prevent the harness &c. from slipping off. The limb can turn on the holder, and can be locked by a spring. A projection on the limb prevents its moving too far outwards. These devices facilitate the release of a fallen horse from a vehicle.

1785. Stokes, C. July 16.

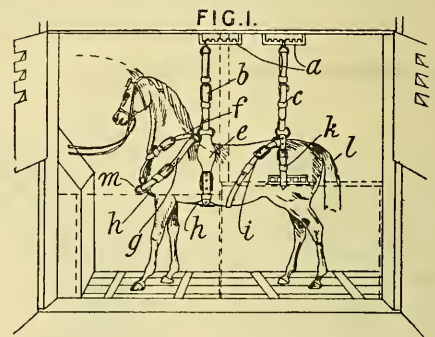
Collars, neck; fastening; lining and padding.—The collar is formed with a metal frame in two parts hinged together at the top and opening at the bottom, and separate hames are dispensed with. Cart collars are fastened by means of a notched bar on one part taking into a fixed stud on the other. Collars for light draught are preferably fastened by a perforated plate sliding into a box in which is a metal tongue acted on by a spring adapted to engage with the perforations.

By these methods of fastening, the size of the collar can be adjusted. The padding of the collar can be made narrower and to fit the shoulder of the horse.

1848. Clark, W., [*Pohl, J. E.*]. July 23.
[Provisional protection only.]

Saddles.—To neutralize the shaking due to the motion of the horse, on the saddle bow and under the seat are fitted two spiral springs of steel, hardened copper, or other suitable metal. On these springs rest two plates of steel reaching to the head of the saddle, which is then covered as usual.

1852. English, A. July 24.

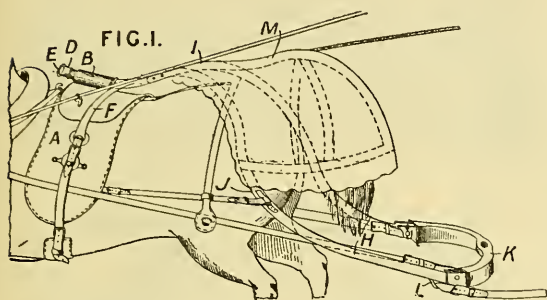


Harnessing, systems of.—An arrangement of straps for securing horses and other cattle during transit by rail, road, or ship is described in connection with railway horse-boxes. Adjustable double straps *b, c* are pendent from roof irons *a*. The strap *b* is connected to an encircling-strap *e* and to straps *f*, the lower ends of which are connected with a plate *h* terminating in a loop through which passes the encircling-strap *i*. The straps *g, k* pass over the body and are connected to fixed staples *m* and metal pieces *l* respectively in the box sides. The horse is thus prevented from falling or lying down, kicking, plunging, or rearing, and may rest his weight on the pendent straps.

2127. Mulet, L. A. Aug. 28. [*Provisional protection only.*]

Horse-boots.—Shoes or coverings for the feet of animals are made of a composition consisting of hardened india-rubber, gutta-percha, &c., with powdered silica, iron or steel filings, or other granulated metals, sand, and powdered glass.

- 2179. Bonneville, H. A.,** [*Beguin, J. F. F.*]
Sept. 3.

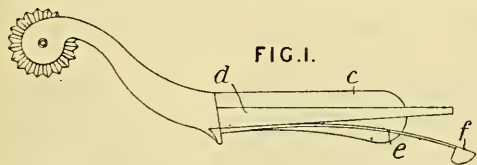


Harnessing, systems of.—Poles and shafts are replaced by the wooden or iron apparatus F, D, I, H, adjustably held by the nut D to the tube B of the saddle A, and also by the front branches F. The padded hind branches H, joined to the futchel K, carry bracing-straps at J and eyes L for straps attached to the carriage to prevent the horse from rearing. At I is attached a light shield M, of leather or metal, to prevent the reins from entangling with the tail or harness. For two horses, the loops E are joined by a strap, and the splinter-bar carries four mortices for the branches H.

- 2257. Millin, G. F.** Sept. 14. [*Provisional protection only.*]

Runaway horses, releasing.—Restive horses are released by withdrawing a bolt which secures the pole in a socket and holds the end of the traces. Or on withdrawin the bolt a coiled spring may be made to remove horizontal bolts, thereby releasing the shafts of a one-horse vehicle, or the traces of a two-horse vehicle, the pole being released in the latter case by the socket bolt.

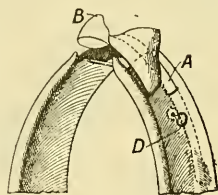
- 2271. Latchford, B.** Sept. 16.



Spurs and spur-carriers; fastening.—A metal socket traverses the middle of the boot heel, from back to front, in which the arm c of the spur, with guide-pieces d attached and fitted with a spring catch e, f, engages to fix the spur to the boot. The inner portion of the heel from which the head f of the spring projects should be made circular in shape to prevent contact between the stirrup iron or other obstacle, and the spring head. The usual spur arms which clasp the boot heel may be used, if desired.

- 2360. Bonneville, H. A.,** [*Landrin, T.*]
Sept. 24. [*Provisional protection only.*]

Collars, neck.—Two metal bars A formed on one side with teeth, gearing with the teeth of pinions mounted in the collar and connected to the rein rings D, are joined at the top by a flexible metal plate covered by a leather cap B. By turning the pinions, the size of the collar may be adjusted.



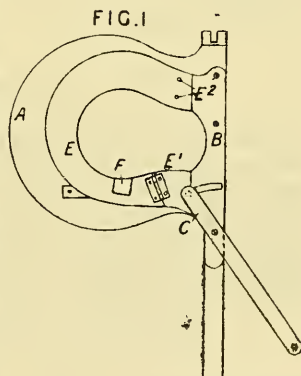
- 2361. Bonneville, H. A.,** [*Landrin, T.*]
Sept. 24. [*Provisional protection only.*]

Fastenings.—In joining two pieces of leather by threads, screws, or rivets, they are slit longitudinally at each side to a suitable depth, the parts through which the fastenings pass being left a little thicker than the others. The pieces are joined, and the thin flaps are turned down to cover the joint and are glued or otherwise fastened by pressure.

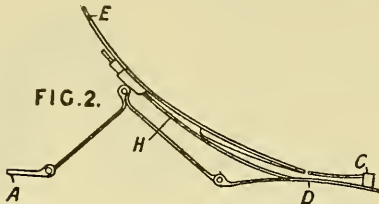
- 2408. Dickey, G.** Oct. 1.

Bridles and halters.—Relates

to blinkers for horses, and consists in the use of adjustable opaque screens, winkers, or blinkers rising from the side of the animal's head, which may, when desired, be caused to cover the eyes. Attached to a metal plate in the cheek strap is a metal plate B, Fig. 1, having a slot through which passes a pin connecting a lever C with the end of a jointed lever D, Fig. 2, working in a recess in the leather part A of the ordinary blinker behind a curved, hinged plate E; this is held in position normally by a spring H working in a guide the parts E¹, E² being screwed to the part A. By pulling the lever C, by means of a rein, the lever D lifts the plate F, attached to the plate E, and causes the latter to be turned over the animal's eye, to protect which the plate E is padded, and an opaque lining of flexible material is stretched across the aperture in the plate E.

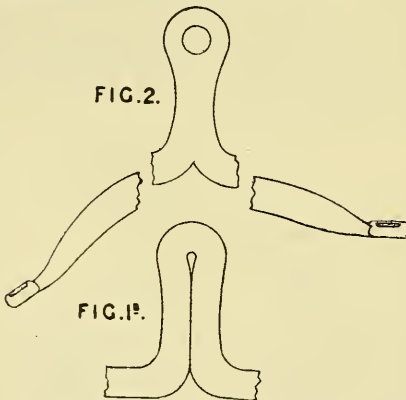


The ordinary winker may be padded and hinged to the cheek strap and operated similarly by levers. In a modification, a fan-like winker formed of vanes or strips of metal is held normally either open or closed by a coiled spring. By an arrange-



ment of a pin and curved plate, the framework of the blinker is made to clear the projecting bone of the eye. In another modification, an opaque elastic fabric mounted on an expanding frame may be drawn across the eyes.

2488. Fairbanks, W. B., Lavender, J., and Lavender, F. Oct. 10.

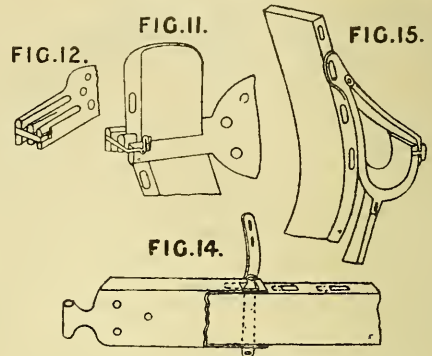


Collars, neck.—The draught-eyes are formed with the hames instead of being welded on as usual. Two pieces of iron may be welded together and shaped as shown in Fig. 2, or each hame may be formed from one piece of metal bent as shown in Fig. 1A, or twisted in any way to form the draught-eye and afterwards welded and shaped by hammering in dies.

2579. Clarkson, T. C. Oct. 21.

Saddles; materials; measuring; combined with pumps; traces; fastening; tugs, shaft; stirrup straps, suspending.—In making military, pack, and other saddles, a skeleton mould is formed of parallel ribs fitted with screw bolts by which the form is adapted to the shape of the animal's back. This is covered with successive layers of canvas, sheet cork, and felt, cemented together by india-rubber &c. solution. The spring bow, stirrup bars, and cantle iron are then fitted and the back of the saddle covered with thin leather.

Alternate layers of cork and felt, with occasional layers of leather and thin or woven wood are cemented in different parts to give the necessary shape, space being left for water or air cushions. A pump is fitted to the pack saddle for filling the receptacles with water. The spring-bar attachment, consisting of a pin passing edgewise through the leather, Figs. 11, 12, admits of single stirrup leathers; a similar attachment is used at the stirrup iron. Traces and harness straps are secured by means of a



spring pin passing through a hole formed in them in the direction of their width, and through a hole in the socket for the trace or strap, Fig. 14. A wire cord, embedded in cork cemented between webs and leather, is used for strengthening harness. Saddles and harness generally, thus formed, are indented, by a toothed wheel, with small holes which are filled up with white or coloured cement to imitate sewing. By using tugs as shown in Fig. 15, shafts can be removed without removing the bellyband.

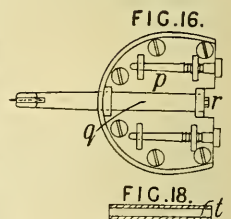
2636. Littleboy, R. Oct. 26.

Nosebags and food-containers.—The nosebag is formed with a perforated rubber or other edging which fits close to the horse's head, thus preventing waste of food which otherwise occurs.

2651. Grason, T. Oct. 27.

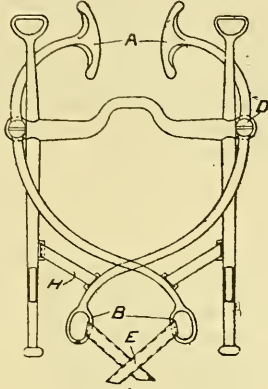
Spurs and spur-carriers.—

A plate to be attached to the heel of the boot has a groove formed in it through which the shaft *q*, Fig. 16, of the spur is inserted, the opposite end of the shaft being provided with a swivel *r* or a thumb-screw which retains it in its position. The groove is filled by a duplicate shaft without the spur when it is not desired to use the spur. In Fig. 18 is shown a channel *t* for holding the spur shaft, which channel may form part of the heel plate.



2900. Balny, A. Nov. 19. [*Provisional protection only.*]

Stopping and controlling runaway and restive horses.—The reins E pass through loops B on arms D pivoted to the bit, so that, when the reins are pulled, the parts A of the arms are brought closer together and pinch the nose of the horse. Elastic bands H hold the parts A open when not in use.



3061. Walthew, F. J. Dec. 5. [*Provisional protection only.*]

Fallen horses, raising; preventing horses from falling.—Horses are supported by a belt or saddle and a chain or cord from an arm or pulley at the top of the vehicle. By winding in the cord, or by raising the arm by a screw, the horse may be rested, or lifted from the ground should it bolt or fall. The shafts or pole may be similarly used by forcing up their outer ends.

A.D. 1864.

40. Tracy, J. I., and Tracy, H. G. Jan. 6. [*Provisional protection only.*]

Whips and hunting-crops.—The handle of a whip is divided into two parts, and a slotted metal tube inserted in a hollow in one part which receives the grip. The other part of the handle has a jointed coupling, the pin of which slides in the slotted tube and may be drawn out of the tube, so as to allow the handle to be folded.

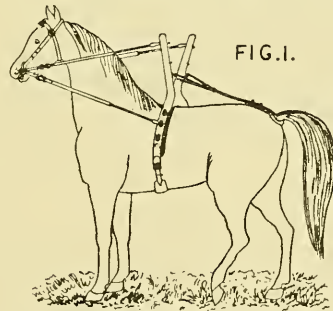
415. Hofmann, J. R. Feb. 18. [*Provisional protection only.*]

Runaway horses, releasing.—Roller bolts are replaced by double rings on the splinter-bar, between which the traces are held by bolts which can be withdrawn by a chain or cord, &c. The pole has similar rings, kept in place by a spring which is loosened "by the pressure of the rings" when the horses go forward."

599. Blackwell, S. March 9.

Horse breaking and training harness; materials.—Horns for dumb jockeys are moulded from gutta-

percha or gutta-percha mixed with india-rubber-ground leather, vegetable or animal fibres, or other matter. The form shown in Fig. 1 is preferred,



one or more strips of whalebone being embedded to increase the elasticity and give greater strength at the root of the horn.

1059. Brooman, R. A., [*Caillard, J.*] April 27. [*Provisional protection only.*]

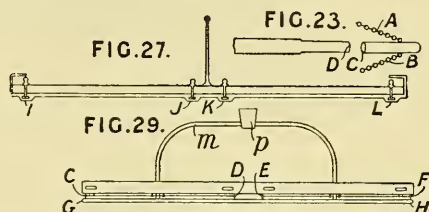
Cleaning and polishing, apparatus for.—A holder used for supporting and gripping bits and other metal parts of harness and saddlery while they are

being cleaned or polished consists of a base-plate or stand, fixed to a wall stand, &c., and carrying at one end a single pair of pinching-jaws operated by a thumb-screw. The other end carries two pairs of jaws, one pair being free to move towards the other.

1072. Ghislin, T. G. April 28.

Whips and hunting-crops.—Compositions containing seaweed, treated as described in Specification No. 2035, A.D. 1862, [*Abridgment Class India-rubber &c.*], gums, india-rubber, gutta-percha, resins, bituminous substances, paraffin, and oily or fatty substances, together with fibrous materials, potassium or sodium silicates, powdered chalk, tale, metallic oxides, gelatine, farina, alum, tungstic acid, powdered charcoal, and similar substances, are used for making riding and driving whips.

1328. Etienne, A. May 28.



Runaway horses, releasing; fastening pole chains and traces. The chains and traces are detachably secured to the splinter-bars and poles to enable frightened horses to be released. The pole chains A, B, Fig. 23, are secured to a loose tube C, which is connected to the end D of the pole by a weak leather strap. A runaway horse breaks the strap and thus frees itself. In a modification, the chains are passed into one or two long hooks on the fore end of the pole. The trace ends are secured by pins in the mortices I, J, K, L, Fig. 27, of the splinter-bar, which is made in two pieces separated by thin flat springs. The upper piece is lifted by the coachman by means of a foot-lever connected by a cord to the rod, shown in Fig. 27, rising perpendicularly from the splinter-bar, so that the pins are lifted from the mortices and the traces are released. In a modification, an arch m, Fig. 29, carries a foot-step p, which, being depressed by the driver, carries downwards the bar G, H bearing on the ends of the springs C D, E F, and releases the traces. A string passing into the carriage enables the passengers to release the horses.

1419. Larmuth, H. A. June 7. *Drawings to Specification.*

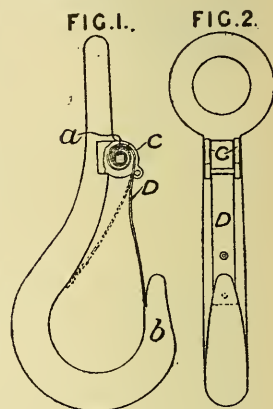
Ventilation; lining.—The lining of saddlery or harness is pleated so as to form tubes through which currents of air may pass.

1508. Bowra, M. E. June 17.

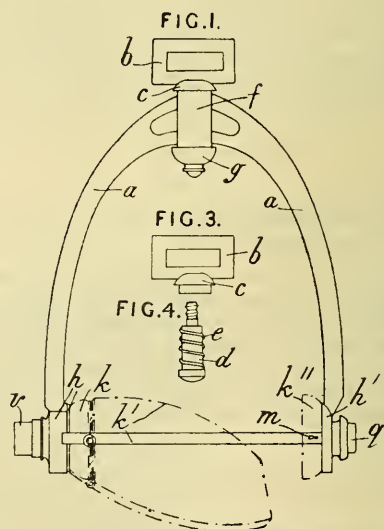
Whips.—Consists in covering whips and whip handles with an india-rubber or other elastic tube or cap, which is made slightly less in diameter and is cemented in position. The whip handles may be made by closing the end of the tube with rubber of the required form. The cores of riding-whips may be made of old india-rubber manipulated to the taper form and covered with a tube as above.

1630. Balans, R. June 30.

Fastening.—Hooks and hook fastenings for harness and saddlery are fitted with a steel or brass spring D, one end of which is coiled round a square pivot a bearing in the cheek pieces C formed at each side of the neck of the hook. The other end of the spring D is forced against the point b, hollowed out for its reception and provided with a small stud to prevent its displacement.

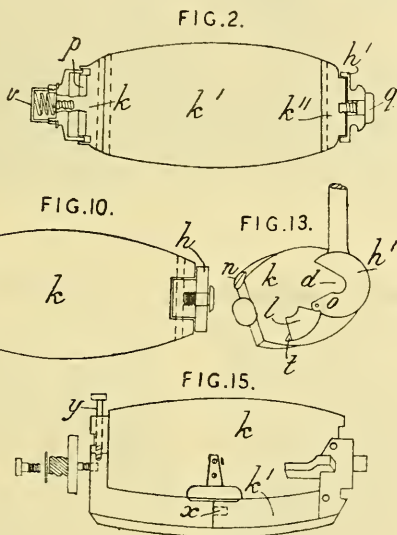


1819. Gedge, W. E., [*Bartenbach, L. G.*]. July 21.



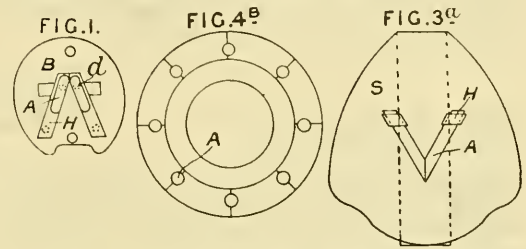
Stirrups.—In a stirrup contrived to open if the rider should be thrown, a socket f, Fig. 1, formed

on the frame *a* embraces and turns about a rod *d*, Figs. 3 and 4, screwing into the part *c* of a ring *b*. A small spring *e* is coiled round the rod *d*, and a closing-cap *g* screws into the socket *f*. The pedal is formed in three parts *k*, *k*¹, *k*¹¹ capable of opening by means of a tenon *m* in the part *k*¹ disengaging a mortice in the part *k*¹¹, which latter part is fixed to the frame by a screw bolt *q*, Fig. 2, fitting loosely in the part *k*¹. The part *k*, screwed to a disc *p* which enters the piece *h*, is lengthened on the other side by a small cylinder, fluted on its outer surface, which enters the opening in the piece *h*, and into which a screw takes which, with a spiral spring in the box *v*, holds a copper washer against the small cylinder, thus preventing the pedal from escaping from the piece *h*. When the pedal turns, as when the rider is thrown, the fluted cylinder advances into the part *h* and thus frees the part *k*¹ from engagement with the part *k*¹¹. In a modification, the pedal is formed in two parts



opening at the middle but held closed normally by means of an S-shaped piece bearing against a projection on the one side and entering a suitable notch on the other. In another modification, the pedal *k*, Fig. 10, is capable of rotation in the disc *h* formed at one end of the frame *a*, the disc *h*¹ formed on its opposite end having a sector *l*, Fig. 13, jointed at *o* to allow the neck *e* of the pedal to be entered into the opening *d*. A tenon *t* on the sector enters a mortice in the disc *h*¹ and is held engaged by a projection *u* on the pedal until this is turned out of its normal position. In another modification, Fig. 15, the part *k*¹ is made in two pieces connected by a tenon *x*, the plate *k* being hinged about a pin *y*. This pedal "opens" in its length and about two-thirds of its width." In other modifications, the plates *k*, *k*¹ are superposed, and the lower plate may be fitted with friction-rollers to permit of its sliding by the inclination and weight of the rider.

1846. White, J. C. July 25.



Whip holders; whip-hanging devices; rein-holders.—A whip or like article is secured between leathers or other elastic pieces *A*, Fig. 1, pressed together from behind a fixing-plate *B* by a spring which clasps studs *d* on the leather holders *H*. The leathers sometimes cover thin metal sheets acted upon by the spring. A rack for holding whips and like articles, Fig. 4^B, consists of a circular or other plate of india-rubber or like material, which is split radially outwards from reception holes *A*, and is secured between ornamental plates mounted on a suitable stand. Fig. 3^A shows a rein-holder comprising india-rubber or other elastic pieces *A* riveted to holders *H* fixed to a spring clip *S* hooking on the dashboard of a vehicle. The inverted arrangement of the pieces *A* in Fig. 3^A constitutes another form of holder for whips &c.

1881. Newsome, J. July 28.

Horse breaking and training harness; spurs and spur-carriers; back and belly bands.—On each side of the bellyband of leather or other material is fixed a spring lever carrying at its lower part a spur, and opposite the spur on the other side of the lever a ring through which passes a cord attached to a rein or "lunge," by pulling which the breaker causes the spurs to impinge on the animal's sides. A weight may be placed on the back of the animal as a substitute for the ordinary rider.

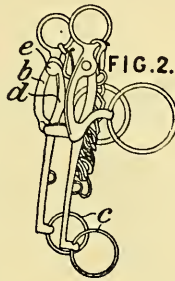
2039. Darcagne, C. F. Aug. 16.

Stuffing-materials.—Fibres obtained from varieties of the sorghum plant are used as a substitute for horse-hair for stuffing saddles. The panicles of the plant are cut from the stem, and are freed from colouring and gummy matters by being steeped or boiled in a solution containing 5 lb. of caustic lime and 8 lb. of soda ash or other alkali to every cwt. of the fibre, until the fibre becomes soft. The material is then crushed by being passed between plain or fluted rollers, and is thoroughly cleansed from all remaining colouring or resinous matter by being boiled for an hour in a solution containing 4 lb. of carbonate of soda to every cwt. of the fibre, or by being repeatedly rinsed in luke-warm water. The fibre

A.D. 1865.

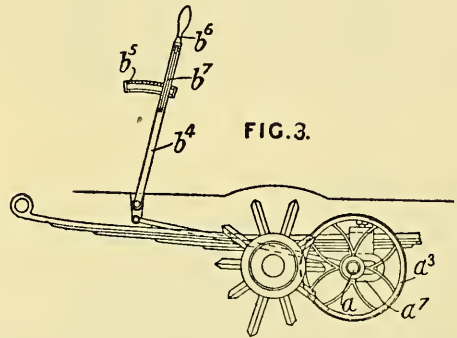
66. Weber, L. Jan. 9.

Bits are formed with a pair of cheek pieces *b, d* on each side of the animal's mouth, so that, on pulling reins connected to the rings of the short pieces *b*, the mouth piece *e*, comprising cross-bars connecting the corresponding cheek pieces, is drawn back as in an ordinary snaffle bit, but, on pulling reins connected to the rings *c* of the longer cheek pieces, the cheek pieces on each side turn on their pivots *e*, separating the cross-bars from one another and so producing additional pressure on the jaws of the animal.



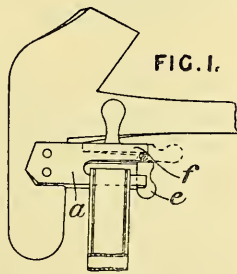
the two frames *D, D¹*. The lid *B*, which forms the footplate of the stirrup, is pierced with several holes and can turn on the hinge *E*, being held in position by a spring catch.

589. Rothwell, P. March 2.



239. Southall, J., and Southall, H. Jan. 27.

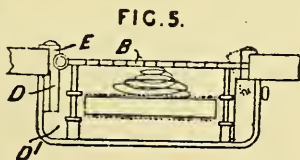
Saddles; stirrup straps, suspending.—In making saddle-trees, a mixture of hair and pulp of papier mâché or other fibre is pressed into moulds in which the ordinary metal strengthening-plates are introduced, the saddle-trees being afterwards dried and hardened. To facilitate the detachment of the stirrup strap, a spring tongue *e* is pivoted to the upper limb of the usual forked plate *a*; to remove the strap, the tongue is turned up, the spring *f* being provided to maintain it in the open or closed position.



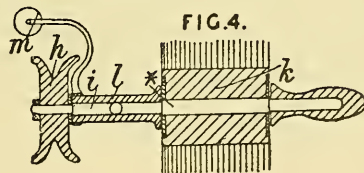
Stopping and controlling runaway and restive animals.—A rein or cord, attached to the bit in the animal's mouth, is wound on a drum, which is mounted on a hollow transverse shaft *a* fitted in slotted bearings *a⁷* under the vehicle. At each end of the drum is a pulley *a³*, faced with leather, which may be brought to bear on the nave of the wheel by operating a handle *b⁶* at the end of a lever *b⁴*. A catch on the handle *b⁶* is forced into engagement with a rack *b⁵*, fixed on the vehicle, by means of a spring *b⁷*, so that the pulleys *a³* can be maintained in contact with the wheels, when the device will act as a brake. In a modification for four-wheeled vehicles, the pulleys are preferably mounted so as to bear on the rear axle and are connected, by suitable cords passing over a pulley at the middle of the front axle, to the bit or bits. Instead of the jointed handle *b⁶*, a handle sufficiently elastic to be disengaged from the rack *b⁵*, but otherwise rigid, may be employed, or the mechanism may be operated by a foot-lever.

477. Gedge, W. E., [Stoker, F.]. Feb. 20.

Stirrups.—The lower part of a stirrup, furnished with a footwarmer, is shown in section. A special fuel containing charcoal, nitrates, and some agglutinant, is placed between



869. Norris, J. March 28.

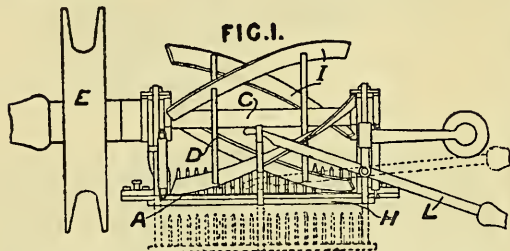


Brushing-apparatus for grooming.—A circular brush *k*, Fig. 4, mounted on the square parts * of a shaft *i* turning loosely in the handles *l*, is rotated by means of a belt passing over the guide-pulley *m* and the grooved pulley *h*. This belt is driven from a pulley mounted on a swivel bearing, and the brush may be renewed by removing the nut on the end of the shaft *i*.

920. Drinkwater, J. April 1. [*Provisional protection only.*]

Brushing-apparatus for grooming.—For grooming horses and other animals, a hollow cylinder attached by arms to a rotating shaft is covered with leather, india-rubber, composition, or cloth, in which the bristles are secured. The brush may be turned by hand through bevel or spur gearing, or by steam or other power through a band and pulley. Handles project from the shaft.

973. Maynard, R. April 6.



Horse clippers and the like.—Helical blades *I*, carried by a shaft *C* rotated by a belt pulley *E*, coact with a fixed blade *A*. The hair is held by a comb *H* adjusted by a handle *L*, or a comb is fitted on the blade *A* or elsewhere.

1038. Haworth, J. April 12.



Brushing - apparatus for grooming. — An apparatus for grooming or cleaning horses and other animals comprises a spherical brush *a*, preferably of bristles secured by a screw to a long pole *b* carrying a flanged pulley *d*, which is rotated by a band from an overhead drum driven by steam or other power. Handles *c* are loose on the pole, but are secured against end-wise movement by washers. The pole and brush are counterbalanced by a weight *b'*.

1222. Allender, J. F., and Cashin, T. F. May 1. [*Provisional protection only.*]

Fastening straps and bands. A metal plate secured to one end of a strap carries a fluted eccentric roller. The other end of the strap is passed beneath the roller in such a manner that it is firmly gripped by the eccentric roller when the two ends of the belt are strained apart. Two or more rollers may be used instead of one, or the roller may be replaced by a sliding wedge.

1285. Hudson, S. May 9. [*Provisional protection only.*]

Stirrups.—In a safety stirrup, a portion of the side bar is pivoted to the sole-plate, and carries a horizontal plate resting between the rider's foot and the sole, and so maintaining the bar in its upright position. A side thrust on the bar will rotate it on its pivot and release the foot. Attached to the side of the sole furthest from the hinge is a spring, which helps to maintain the bar upright, and the end of this spring "is allowed" to pass through an aperture in the middle of the "leg," so that the side bar may turn upside down for complete disengagement. A strengthening-pin connects the side bar to the arch of the stirrup.

1476. Davis, S. May 30. [*Provisional protection only.*]

Dog leashes for one or two dogs. A cylindrical boss rotating on the bent part of an elongated, parallel-sided, spring hook carries one or two prongs free to pass between the limbs of the hook. The dog straps terminate in eyes slipped over the prongs and secured by an oval ring embracing and sliding over the spring or prongs and preventing rotation of the latter. When the ring is pulled back by a string, the prongs are turned owing to the pull of the dogs, which are thereby released.

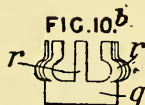
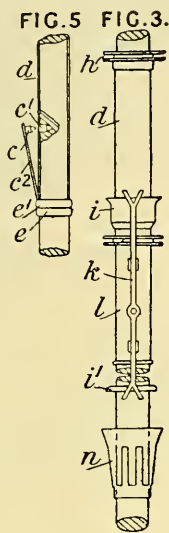
1617. Dubois, J. F. June 15. [*Provisional protection only.*]

Bits; stopping and controlling runaway and restive animals; bridles and halters; twitches, pins, and the like.—The arms of the bit are bent forwards and united by a small bar, to which is fixed a "safety-guide" passing over the musrole, the middle of the front and the nape of the neck, to the driver, or one or two "forked guides may" be employed." A curb in the form of a small chain or metallic band, or of both, shaped to the forehead is attached at its ends to the upper part of the bit arms and is held at the middle by a hook. By pulling the safety guide or guides, the curb "passes on the nostrils and forehead, but" "the bit presses on the upper bars and roof of

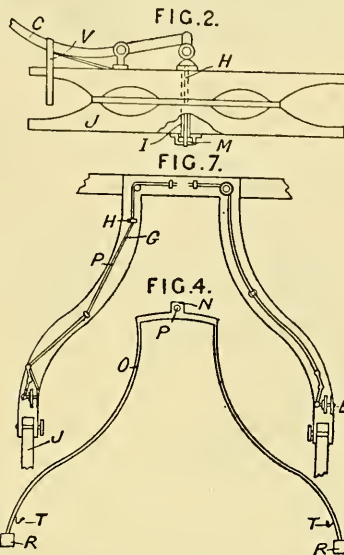
"the mouth." In shoeing a restive horse the safety-guide is attached to a ring set close on the withers.

1673. Becker, N. de. June 22.

Whips.—The frame of a parasol is constructed so that it can be readily removed from the stick and fitted to a riding-whip. A thin brass or other metal tube *d*, perforated or otherwise, is fitted over the stick and secured by the engagement of the end *c* of a spring catch *c*², Fig. 5, with a hole *c*¹ in the stick. This catch *c*² is soldered to a ring *e* which is secured to the end of the tube *d*, and is closed by a second sliding ring *e*¹. Instead of this method of securing the tube *d* to the stick, a bayonet fastening may be used. For parasols of ordinary construction, having long stretchers, the tube *d* is made shorter and is secured to the stick by punching. The tube *d* has soldered to it a top notch *h*, Fig. 3, and two cup rings *i*, *i*¹, with which one or other of the ends of a spring catch *k* on the runner *l* engage when the parasol is opened or closed. The stretchers, however, are preferably made only about one-third the length of the ribs, the top-notch ends of which are T-shaped and adapted to engage between curved teeth *r* of the notch *q*, Fig. 10b, which is either soldered to the tube *d* or punched to the stick, the upper end of the top notch being closed by an open cap. When the parasol is closed an ornamental tip cup *n* is slid over the ends of the ribs. This serves to maintain the ribs parallel to each other, and also as an additional means of holding the parasol closed.



2214. Holmes, R. T. Aug. 29.



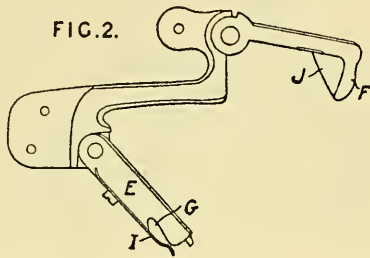
Runaway horses, releasing; stopping and controlling runaway animals.—Relates to means for disengaging runaway or restive horses, and for keeping them somewhat under control when disengaged. To release the animal from the carriage, the depression of a lever *C* by the foot or hand raises a pin *H* in a hollow perch bolt *I*, so that the lower end of the pin is disengaged from the hole *P*, Fig. 4, of a duplicate futchel *O*, the end *N* of which is normally received by a socket *M*. The traces are attached to the hooks *T*, and the shafts to sockets in the duplicate futchel, while sockets *R* receive the ends of the ordinary futchel, so that, when the lever is operated, these sockets slip off, and the horse with its harness, the shafts, and the duplicate futchel, is entirely disconnected from the vehicle. A spring on the underside of the shaft acts on the duplicate futchel, and normally prevents the shafts from falling on the ground, while the same spring keeps the duplicate futchel horizontal when the horse is released. To prevent the carriage from deviating from its direct course on depressing the lever, a clip *V* descends upon either side of the lower bed or perch *J*. With the arrangement shown in Fig. 7, the horse is harnessed with the tugs taking on to the short hooks on the shafts opening outwards towards the head of the animal, the backbands of the tugs being passed inside the shafts instead of outside; the traces are fastened to the tugs, while the kicking-straps, in lieu of going round the shafts, are secured to the traces, which are attached to the futchel by pins *E*. To release the horse, the actuation of a flexible band or chain *G* passing through guides *H*, or of a centrally-pivoted lever *P*, withdraws the pin so that, on the continued advance of the horse, the carriage with the shafts *J* is left behind. By increasing the number of levers and their attachments, the apparatus may be adapted to two-horse vehicles. The pole cap is preferably formed as a socket provided with an open slot engaged by a stud on

2172. Tongue, J. G., [Carron, F. R.].
Aug. 23. [Provisional protection only.]

Horse clippers and the like.—A clipper for horses and other animals is formed by a number of helical blades or cutters mounted on a shaft and arranged to be driven round against an adjustable fixed blade by means of a winch handle and gearing. A comb in combination with the fixed blade guides the hair to the cutters. Oil or other lubricant is supplied to the revolving cutters by a strip of leather connected with a reservoir. Wrinkles or other irregularities are smoothed out in advance of the comb by a rectangular frame, which can be turned back when not required.

the pole and is carried away with the horses. To keep the animals somewhat under control when disengaged, a long rein is provided and is adapted to be paid out as the horses leave the vehicle.

2320. Davis, S. Sept. 11.

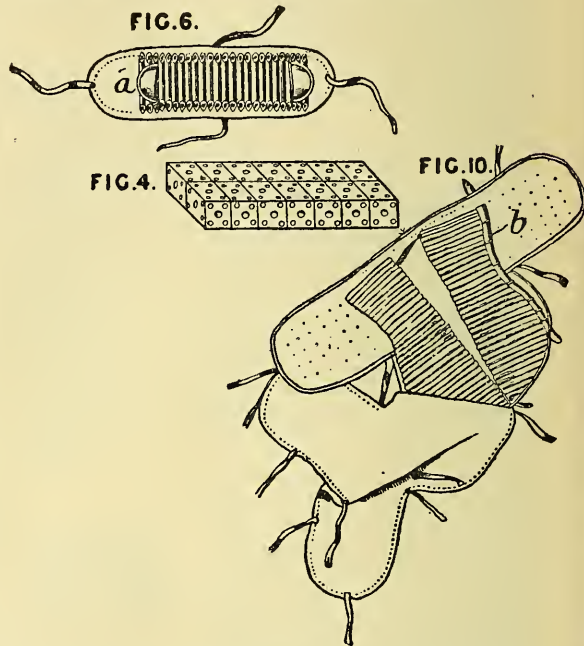


Stirrup straps, suspending.—In order to release a fallen rider from the horse and saddle, the stirrup strap is made to depend from a hinged bar E, which is brought horizontal and supported by turning a hook F to engage a corresponding notch G, a spring I being provided to make the joint more secure. During riding, the pressure is exerted on the bar, but when the pull upon the strap is made obliquely backwards, as from a fallen rider, the strain is thrown on to the shank of the hook, which consequently opens, leaving the bar to fall as shown, and releasing the strap. A plate J serves to guide the strap to shift its bearing from the bar to the hook shank.

2366. Clark, W., [Angelini, A.] Sept. 15.

Lining and padding; saddles.—To protect animals, particularly cavalry and draught horses, against wounds from the saddles, collars, breast collars, and other harness, the linings, paddings, or cushions are replaced at the chief frictional parts by cushions of gutta-percha or india-rubber, vulcanized or otherwise, in forms adapted to permit free circulation of air. To render the seats of saddles more easy, a filling of small tubes or of spongy materials may be applied. As shown in Fig. 6, the cushions may consist of tubes provided with holes at the parts in contact with the animal and moulded in continuous connection or applied side by side on a strip of leather, or double tubes, perforated tubes, as shown in Fig. 4, sponge-like structures, or knobs placed closely together on a rubber sheet, may be used. The top of the cushions is covered with elastic material, which may be attached by cords or by a strip of felt a. For saddles, the cushions occupy the position usually taken by the panels at the upper part of the saddle, and are contained between the two

linings, the tubes being arranged vertically as shown in Fig. 10. To obtain a free circulation of air, the lining may be perforated, or an air-distributing tube b projecting either at the back or front may run across the lower ends of the tubes. The cushions may also be detachable from an unpadded saddle, being strapped on underneath the latter. For cavalry and other saddles, the cushions may occupy the position of the under saddle-cloths. In collars, the cushions are placed between the stuffing and the inner leather lining,



but the tubes need only be used at the parts more directly in contact with the animal. For horses exposed to sudden stoppages, such as those of omnibuses, a false collar of tubes may be strapped to the animal's neck, and fixed at the bottom by a martingale. Breast collars or bands are provided with tubes preferably between the thick outer leather and the thin inner leather, or a false breast collar, attached lower down than the band itself, may be employed. The knob-like or spongy forms are suitable for the collars and pads of draught horses.

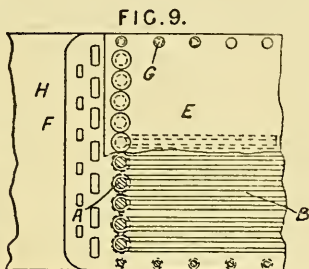
2423. Cartwright, M. Sept. 22. *Drawings to Specification.*

Knee-caps.—Sheets or narrow bands of india-rubber or other elastic material are used for various articles which need to expand and contract. The edges of the band are united to non-elastic materials by pressure when the india-rubber is in a soft condition, or by means of india-rubber solution or cement. In the Provisional Specification the application of the invention to knee-caps for horses and other animals is mentioned.

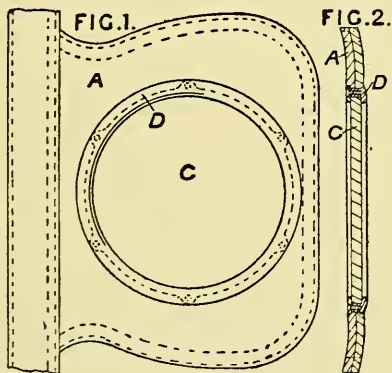
2619. Crutchett, J. Oct. 11.

Bridles; traces.

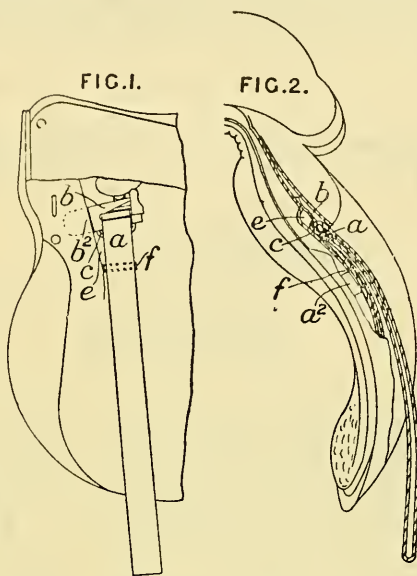
—Straps and bands of india-rubber, leather, &c., for coach and artillery reins and traces &c. are strengthened by flat, round, twisted, &c. metal wires. The wires B are fitted to or passed around eyelets A, or studs, pins, rivets, buckles, &c., which may be secured to plates H of suitable shape.

**2630. Lerendard, A. A.** Oct. 12. *Drawings to Specification.*

Materials. — Compositions containing vulcanized or unvulcanized india-rubber dissolved in coal tar, paper pulp, colouring-matters, and sulphur are used for articles of saddlery.

2658. Elliott, C. P. Oct. 14.

Bridles and halters.—Blinkers for horses and other animals are made with openings, which may be provided with sheets of glass, tale, or other transparent substance. The glass &c. C may be secured in or retained between the leather pieces A, which are stitched together as usual. Or a metal frame D may be employed, having an ornamental rim.

2688. Jones, T., and Mason, E. K. Oct. 18.

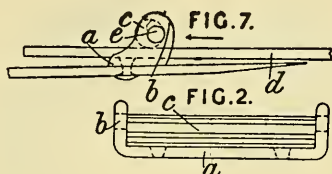
Saddles; stirrup straps, suspending.—A depression *e* in the saddle is covered by the spring bar *b*, which is shouldered at *b*² so as to form a space between the part *b* and the bottom of the recess *e*, into which fits the single plain buckle *c* carrying the stirrup strap *a*. The buckle is bent and is mounted with its convex side resting in the concavity of the recess. The free end *a*² of the strap is slipped through the slot *f* in the flap of the saddle, behind which it is concealed. With this method of mounting the spring bar and strap, a smooth surface of the saddle skirt is obtained.

**2704. Johns, W.** Oct. 20. [*Provisional protection only.*]

Stirrup straps, suspending.—To free the stirrup straps when the rider is thrown, they are attached to two dissimilar, interlocking, hooked finger-pieces, pivoted to the saddle-bar so that, on being rotated beyond a certain angle, they open and liberate the straps. The inner end of the lower bent lever "is bevelled so as to rest and "act upon the bevelled part of the lower and "shorter end or arm of the upper hinged or "pivoted straighter finger-piece" so forming an eye within which the strap is retained. To release the strap horizontally, the upper hinged piece "is raised upwards by the inner and "horizontal end or tail piece" of the lower lever, whilst, in the case of the stirrup and rider's foot going over the saddle, the strap is released by contacting with the longer end of the upper

lever, which it opens. The spring bar may be formed with a strip to support the levers when in their normal position, and with a steel spring to restore the levers and assist the action of the parts.

2802. Cashin, T. F., and Allender, J. F.
Oct. 31.



Fastening.—Relates to a buckle for use with harness. The plate *a*, the lugs *b* of which carry an eccentric roller *c*, is riveted to one end of the strap to be fastened, the surfaces of both the plate and roller being serrated. The other end *d* of the strap is passed between the plate *a* of the roller *c* and is secured there by turning the roller to bring its long radius towards the strap. In the modification shown in Fig. 13, a bar *i* slides in slots *h* and acts as a wedge to grip the strap.

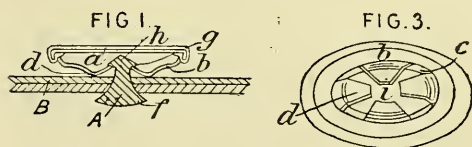
FIG. 13.



3096. Morin, E., and Schweizer, R.
Dec. 2. [Provisional protection only.]

Fastening. — Relates to hook fastenings for harness, chains, &c. A projection on the end of one oval short arm of one of two levers pivoted together fits a recess on the end of the other arm. A spring presses the long arms together. Beyond the spring, the long arms are bent towards each other, a central arm on one passing through a slot on the other. The arms terminate in superimposed rings through which the chain &c. is passed.

3164. Bousfield, G. T., [Palmer, F. I.]
Dec. 8.



Fastening; ornaments for unspecified articles.—

Relates to a method of securing ornaments and buttons for harness. The front shell *a*, Fig. 1, of a button is secured to the stud *A*, which forms the shank, by the collet or back of the button shell *b*. This part *b*, Figs. 1 and 3, contains a number of punched openings *c*, the remaining portions being bent up to form springs *d*. The point *h* of the shank *f* of the stud *A* is passed through the article *B*, and forced through the opening *i* of the button back *b*, the springs *d* of which close over the shoulder *g*. The button may be made removable by forming the shank *f* with a number of notches through which the springs *d* can be withdrawn when the shank is turned into position.

3325. Newton, W. E., [Wurtz, H.]
Dec. 23.

Whips.—Consists in the manufacture of insoluble substances resembling bone, horn, ivory, tortoise-shell, &c., and suitable for making whip stocks. The substances are produced by heating together aqueous solutions of glue or gelatine, and chromic acid or an alkaline bichromate, and allowing the liquid to gelatinize. Before this treatment, the glue or gelatine solutions may be mixed with heavy powders to give weight to the product, with sand, clay, emery, glass, red oxide of iron, or Tripoli powder to give hardness, or with chopped fibre such as cotton, hair, spun glass, asbestos, or the like to give strength and toughness. Suitable colouring-matters may be added. Thin sheets are prevented from becoming brittle, in dry or cold atmospheres, by rubbing with glycerine, which becomes absorbed by the sheets. Greasy or resinous powders are moistened with dilute alcohol before being added. Alcoholic solutions of castor or other oil, shellac, gum mastic, or the yellow resin of gamboge may be added. The products are softened by heat or steam. In making small articles, such as buttons, the jelly is cast in an elongated cylinder, rolled in tissue paper, and then enclosed in an elastic network bag which causes it to keep its shape in drying. The bag may be inelastic, and may be weighted. The articles are turned from the cylinders so formed. Masses for making large objects are built up by uniting several layers of material. The dried layers are pressed together by sheets of wire gauze. The composition may be cast in large moulds and then sliced into sheets, which are dried partially on oily metal plates. When no longer adhesive, the sheets are dried completely between layers of wire gauze.

3334. Hurn, G., and Hurn, D. Dec. 23.
Drawings to Specification.

Traces; whips; dog collars. — Continuous lengths of leather are cut from the outer edges

towards the middle of a hide, thus forming a thread in the form of a spiral, which is then straightened by stretching, damping, or greasing, and may be made round or otherwise shaped by

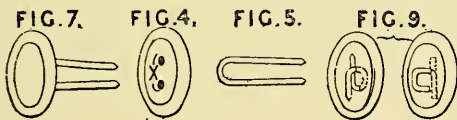
means of dies. These threads may be used, alone or combined with cotton, silk, wool, hair, hemp, and flax of all kinds, for whips, traces, dog collars, and various other articles.

A.D. 1866.

620. Henton, S., and Henton, C. J.
March 1. [Provisional protection only.]

Currycombs.—A rotary brush for brushing, currying, or dressing the skin or hair of animals or hides is constructed with a series of bars or combs of metal combined with the bristles in alternate layers.

735. Gedge, W. E., [Salvy, L.]. March 10.
[Provisional protection only.]

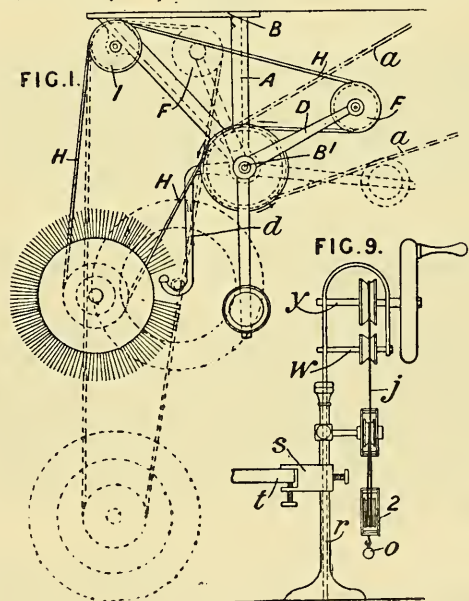


Fastening; ornaments for unspecified articles.—Relates to the manufacture of studs, buttons, ornamental plates, and the like, used in harness and saddlery and for other purposes. They are made from rolled, cast, or wrought metal, or other hard substance such as horn, ivory, gutta-percha, wood, or hardened india-rubber, and consist of a lower plate pierced with two or more holes X, Fig. 4, according to the number of prongs on the shank, Fig. 5, which is formed of bands, round, angular, or flat wire, bent as desired. These pieces, set as shown in Fig. 5, are fitted in a cap, Fig. 7, and submitted to strong pressure, in which operation a design may be impressed on the cap. In fixing, the prongs are crossed after being passed through the material. In forming buttons with ring shanks, the two ends of the fastening are crossed and flattened between the lower plate and the cap, as shown in Fig. 9.

939. Turner, C. April 2.

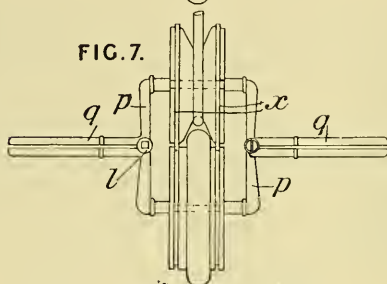
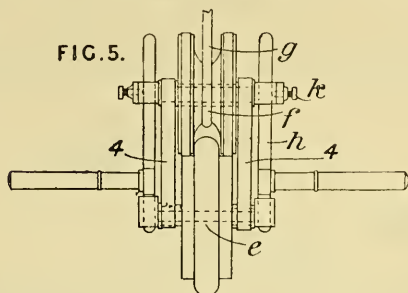
Brushing-apparatus for grooming.—Fig. 1 shows in elevation an apparatus for rotary brushing and rubbing. A bracket B fixed to the ceiling &c. carries a double-grooved pulley B' and a single-grooved guide-pulley I. A weighted lever D carries at its end a grooved pulley F and swings

about the axis of B'. A driving-band H passes one and a quarter times round the pulley B' and also partly round the pulleys I, F and the one on the brush. The second groove on the pulley B' is occupied by the main driving-band a. The lever D swings, as shown in dotted lines, as the brush is moved, but keeps the band H tight. Hooks d are provided on which the brush may rest when not in use. In a modification, the lever D is dispensed with, the pulley F is weighted and suspended in a loop of the band H, and suitable



guide-pulleys are fixed above the pulley F. The hooks d are turned over to prevent the brush from leaving the rest, or a rest is provided for the weight attached to the pulley F. Fig. 9 shows a modified portable form of the apparatus in which the pulleys are fitted to a standard r which can be clamped to a table &c. t by the clamp s. A weight o is attached to the double-sheaved pulley 2. The brush engages with a part of the band j between the driving-pulley y and a guide-pulley w. Fig. 5 shows a brush or rubber holder

in which the brush or rubber *e* is driven by friction from the pulley *f*, which is grooved to receive the band *g*. The axes are connected by a frame *h* and clamps *k* as shown. Rubber bands 4 press the pulleys together. Fig. 7 shows a modification in which the axes are connected by



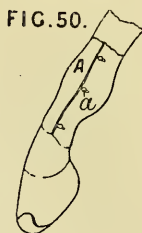
cranked levers *p*, *q* jointed at *l*. Rubber bands *x* provide additional friction. The brush may be attached to the end of a long handle when brushing animals, and additional guide-pulleys may be provided to keep the driving-band from touching the animal while brushing underneath it.

1249. Nurse, C. May 2. [Provisional protection only.]

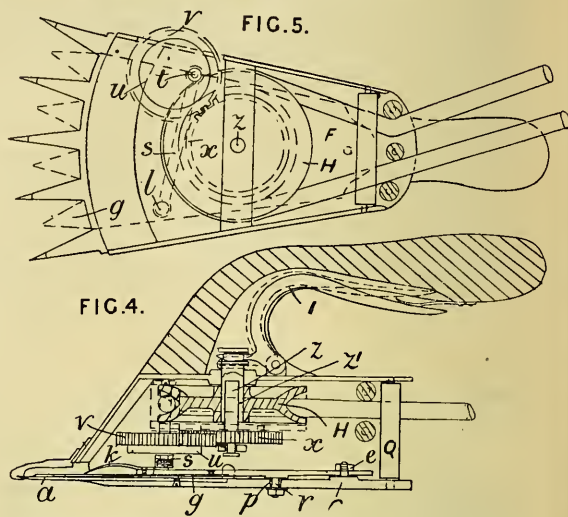
Fastening stirrup leathers and other straps. A projecting stud is riveted to a plate which is concealed under the leather and held in place by stitching or riveting. The end of the strap is perforated and passes under a loop attached to the plate. The stud engages one of the holes in the strap, which is pressed down flush, and the fastening is completed by slipping the loose end of the strap under one or more loops.

1360. Clark, W., [Wilkinson, A. S.]. May 11.

Horse-boots.—A rubber boot *A* for the fetlock may be stretched over the foot or fastened with buttons *a* or strings. The boot may be perforated, and part of it is thickened to prevent speedy-cutting. It may be coloured to match the horse's leg, and may have an outer coating of hair vulcanized into the rubber.



1645. Renshaw, A. D. June 19.



Horse clippers and the like.—Mechanically-driven shears for sheep &c. comprise a reciprocating plate *F* with cutters *g*, moving over a fixed plate *C* with cutters *a*. The plate *F* is pivoted at *e* to the plate *C*, and the two plates are kept together by the screw *r*, travelling in the slot *p*. The cutters *g* are pressed downwards by springs *k*. To produce the required oscillation, a pin *l* on the plate *F* is connected by link *s* to a pin *t* on a disc *u* carried by the spur-wheel *v*, gearing with a wheel *x*. This latter is carried by an axle *z* sliding in a sleeve, so that, by pressing the lever *I*, clutch pins on the wheel *x* can be made to engage with the main driving-wheel *H*. In an alternate method of driving, the wheels *x*, *v* are replaced by a disc carrying clutch pins and connected to the plate *F* as before.

1818. Dégravel, F. July 11. [Provisional protection only.]

Nosebags.—The strap by which the nosebag is suspended from the animal's head is attached, at each end, to helical springs contained in telescopic tubes at each side of the bag and preferably inside it, so that, as the food is consumed, the springs contract and maintain the food at the same distance from the mouth of the animal. Rings at the top and bottom of the springs are united by a strap or cord to retain the springs in the tubes. The bag may have an aperture, covered with canvas or perforated metal, to sift the food and enable the animal to breathe freely.

1847. Day, G. July 14. [*Provisional protection only.*]

Stopping and controlling runaway and restive animals.—A strap or round rein, fastened to one side of the bridle and passing beneath the horse's throat and through rings or round pulleys to the driver, is pulled to stop the breathing of the animal in the event of its becoming unmanageable or running away. A straight piece of steel may be inserted in the rein beneath the horse's throat to relax the pressure thereon when the driver releases the rein.

1873. Gedge, W. E., [*Larivière, E.*] July 18. [*Provisional protection only.*]

Runaway horses, releasing; fastening traces.—In an arrangement which permits of the instant release of the horse or horses from a vehicle, the traces are attached to friction-rollers engaging hooks at the ends of a bar which can turn in a bearing on the vehicle. A hinged rod fixed to the bar carries at its end a plate, through a hole in which passes a hook fixed on a vertical spindle turning in the hollow pole pin or similar member. When the spindle is turned, by means of a cord connected to a handle, so as to bring the hook into the opening in the plate, the plate escapes from the spindle and the traces are released. The backing-apparatus is held to the shafts or pole by a spring catch, which is released when the horse leaves the vehicle. The release may be facilitated by means of a strap passing to the driver.

1942. Toms, W. July 26. [*Provisional protection only.*]

Rein-holders; saddles.—The holding parts of a clip or holder attached to a vehicle or saddle for taking the reins or bridle are formed with concave and convex surfaces, pressed together by a spring. The free end of the spring is preferably concave, and presses on a convex surface secured to the vehicle. The holder is lined with india-rubber, leather, or other material, and a lever may be provided to facilitate the opening thereof.

2055. Clay, J. Aug. 9.

Saddles.—Saddle-trees are made of hollow metal, and may be coated with papier mâché, "parkesine," or other material, which coating would be of increased thickness in parts to take the nails for securing the webs and leather thereto. The saddle-trees may be of iron, brass, or other metal or alloy, and may be cast or formed of sheet metal. They may be made in several pieces; when in two, forming the upper and lower sides, these pieces would be joined at their edges by soldering, brazing, or riveting, or by turning the edge of one piece over that of the other. When the saddle-tree is not coated, the webs and leather may be screwed or riveted thereto, or holes may be made in the saddle-tree to facilitate their connection.

2235. Clairmonte, A. J. Aug. 30. [*Provisional protection refused.*]

Pads for; saddles; collars, neck; collars, breast.—Panels, which can be applied to saddles, collars, breast plates, and breast bands, and which may be used as numnahs or pads for placing beneath both riding and harness saddles, are formed of a congeries of india-rubber tubes, with one or more air-chambers running through them, and which may be covered, either separately or altogether, with leather or cloth.

2262. Bonneville, H. A., [*Faure, A. A.*] Sept. 3. [*Provisional protection only.*]

Nosebags.—To maintain the level of the provender in the nosebag near the horse's mouth, cords pass from each side of the bag over pulleys within the cockades or other parts of the harness, the pulleys being actuated by volute springs so that the cords are wound thereon as the weight of the contents of the bag diminishes.

2322. Gedge, W. E., [*Salvy, L.*] Sept. 10. [*Provisional protection only.*]

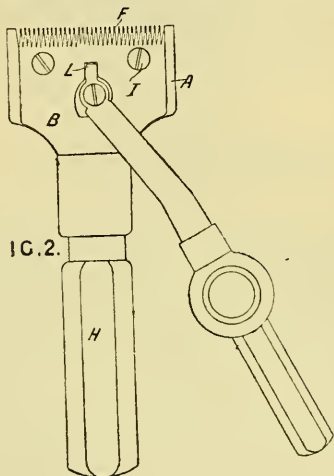
Ornaments for unspecified articles; fastening.—Studs, buttons, ornamental plates, and the like, for harness and saddlery, military equipments, and other purposes, are provided with special shanks. They may be made of metal or of any hard material, such as horn, ivory, india-rubber, gutta-percha, or wood, and may have several shanks, or fastening rings or prongs. The lower plate of a stud is pierced with two holes to receive the prongs of a metal fork, and the cap of the stud is fitted thereto and the whole submitted to pressure, by which the parts are secured together and the cap given any desired impression, size, or shape. To secure the stud on a piece of saddlery, the prongs of the fork are crossed to form a kind of knot, and flattened. Studs with two, four, six, or more shanks are made similarly; and the arrangement may be applied to ornamental plates, monograms, cockades, and other articles of military equipment or general use.

2371. Keyston, J. Sept. 15. [*Provisional protection only.*]

Whips.—In manufacturing whips, whip handles, and riding and walking canes, hardened steel rods are first coated with a solution of pitch, and sheets of ebonite in a soft or pulpy state are then wrapped spirally around the rods. The successive sheets of ebonite are caused to adhere together by solutions of naphtha. The articles when formed are pressed in moulds of the required shape, and are then hardened by being wrapped in wet cloths and heated in a sand bath to a temperature of 350°. The finished articles are polished and mounted as desired.

2429. Challinor, T. Sept. 21. [*Provisional protection only.*]

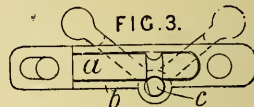
Cleaning and polishing apparatus for.—A series of circular brushes are mounted upon a shaft rotated by a treadle and crank or by other means. The blacking or other polishing-medium is contained in a reservoir and is applied to one of the rotary brushes by a feeding-brush so carried by an arrangement of parallel levers that it can be depressed to take up the blacking and then raised by springs. The levers can be turned partly over to bring the feeding-brush into contact with the blacking-brush, and, on being released, they return to their original positions. The articles to be cleaned are pressed successively against the blacking and polishing brushes. Additional brushes or rubbers may be added if desired.

2796. Adie, P. Oct. 30. *Disclaimer.*

Horse clippers and the like.—To regulate the length of hair left, and to protect the skin from injury, clippers for horses and other animals are formed with a comb. The under part A, provided with comb teeth F, behind which are cutting-edges which co-operate with similar edges upon an upper part B, is connected to this part by screws I passing through slots therein, so that, on operating the handles H, lateral motion is given by the lug L to the upper part, and cutting is effected in both directions. To increase the length of hair left, an extra comb may be fixed below the apparatus. In a modification, a rotary handle operates the part B through a connecting-rod attached to an eccentric upon a second axis. To facilitate the entry of the cutters, the hairs are brushed up by a circular brush turned by bevel gear and pulleys. According to the Provisional Specification, the cutters, when attached by a spring top, are made to cut one way only, while, in lieu of the part B, a series of spiral cutters forming a revolving cylinder, or flat circular cutters formed like a wheel, may be used, the cutting-edges being the spokes or the inner sectional periphery.

2921. Johnson, J. H., [Thiercelin, E. E.]. Nov. 9.

Fastening.—A coupling or fastening, shown in Fig. 3 as an attachment for rack chains for stables, but stated to be applicable to swivels and similar fastenings for saddlery, pole chains, and splinter-bars of vehicles, &c., consists of a pin a entering a socket b and secured therein by means of a pin c engaging a groove in the pin a. The pin c is operated by means of a handle, and has a flat part to be brought opposite to the groove when it is required to withdraw the pin a.

**3132. Langsford, H.** Nov. 28. [*Provisional protection only.*]

Saddles; backbands.—Harness saddle-trees are formed with a fixed metal backband into which tug eyes are screwed, holes being made in the band to permit of the eyes being raised or lowered. Loose backbands are thus dispensed with.

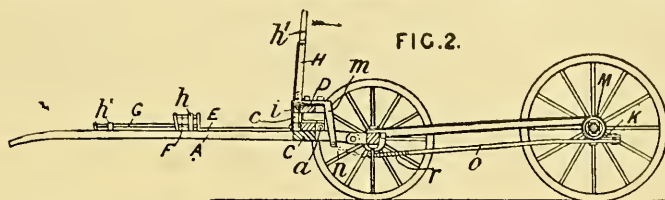
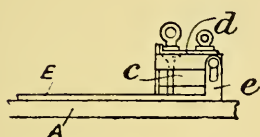
3239. Southall, H. Dec. 8. [*Provisional protection only.*]

Fastening traces. Buckles for traces &c. are made with detachable bars, and the end of the trace which passes round the bar is provided with two rollers or short tubes, one on either side of the tongue. Each roller is attached to the trace by a small metal flap which is sewn into the double part of the trace.

3418. Newton, A. V., [Ducruix, C.]. Dec. 29.

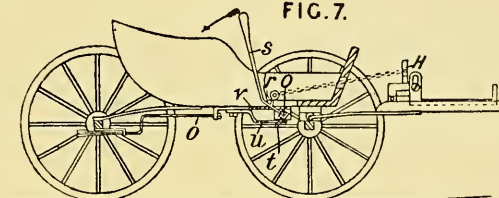
Runaway horses, releasing; fastening.—An arrangement for releasing runaway horses is also adapted to apply the brake, and, in a modification, the brake can be operated alone when required. A cross-bar D extends above the bar C between the shafts A, and is pivoted to it by means of an arm working on a pin a. Pins c on the cross-bar D are held in position by hinged hook-like plates d, Fig. 3, adapted to engage grooves round their upper ends. These pins, when the cross-bar D is down, fit in sockets in the bar C and take the traces. Sliding bars E on the shafts are connected to the ends of the bar D by slotted arms e, and carry rods F, G passing through uprights h, h' respectively, between which they hold the backbands. A cranked arm m on the bar D is connected, by a chain n and bar o, to the hinge pin of arms K which operate hollow brake blocks M. When the lever h¹, which is pivoted to an arm H on the bar D and is normally locked by a spring i, is moved in the direction of the arrow the bar D is swung back on the pin a, whereby the traces are released from the pins c,

FIG. 3.



and the bars F, G are pulled back far enough to release the backbands. At the same time the spring *r* is overcome and the rod *o* drawn forwards so that the brakes are applied. In two-horse vehicles, the whipple-trees are held by the pins *c*, and the pole chains are secured between uprights on the pole by a bifurcated or other bar, operated in a similar manner to the bars E. In a modification shown in Fig. 7, the arm H is connected by a chain to a crank *r* on a transverse rocking shaft O operated by a handle *s*. When the handle is moved in the direction of the arrow, the lever H is pulled back to release the horses, and the brake is applied by a pin *t* passing through a slot in the arm *u* on the brake rod *o*. If the handle be moved in the opposite direction, the brake is applied by the crank *r*, which passes

FIG. 7.



through a slot in the arm *v* of the brake rod, and the releasing-arrangements are not operated. A separate releasing-device may be provided for each horse of a pair.

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EXPLANATORY NOTE.

The contents of this Abridgment Class may be seen from its Subject-matter Index. For further information as to the classification of the subject-matter of inventions, reference should be made to the *Abridgment-Class and Index Key*, published at the Patent Office, 25, Southampton Buildings, Chancery Lane, W.C., price 1s., postage 6d.

It should be borne in mind that the abridgments are merely intended to serve as guides to the Specifications, which must themselves be consulted for the details of any particular invention. Printed Specifications, price 8d., may be purchased at the Patent Office, or ordered by post, no additional charge being made for postage.

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HARNESS AND SADDLERY.

Patents have been granted in all cases, unless otherwise stated. Drawings accompany the Specification where the abridgment is illustrated and also where the words *Drawings to Specification* follow the date.

A.D. 1867.

388. Stratford, W. Feb. 12. [*Provisional protection only.*]

Preventing horses from falling; fastening traces. The object is to lessen the chance of accident from the falling of the horses, and in the event of their falling to allow them to be quickly released. The improvements are described as applied to two-wheeled carriages. The ordinary shafts are dispensed with, and instead thereof a bar is situated above the animal's back. At the end of the bar farthest from the carriage is a forked or curved bar passing down at each side of the animal's body and attached to the saddle of the harness by loops. The loops are made in two parts hinged together and fastened by a tapped pin, the partial withdrawal of which will allow the bar of the carriage to be readily detached from the saddle. The animal is further harnessed to the carriage by traces which are attached at one end to the carriage by hooks and at the other end to the collar by buckles. The hooks may be hinged and provided with spring catches, so as quickly to release the traces; the buckles are so made that their pins carrying the tongues can be easily drawn out, thus detaching the traces and releasing the animal. Or the traces may be secured to the carriage by an arrangement of buckle or shackle having ridges or recesses fitting on to the ends of a short bar attached to the vehicle.

508. Turner, C. Feb. 23. [*Provisional protection only.*]

Brushing-apparatus for grooming.—Relates to rotary brushes or wisps. The bristles or the like are fixed in an endless belt of leather or other material cut into portions which are united by india-rubber pieces, and the belt is stretched on

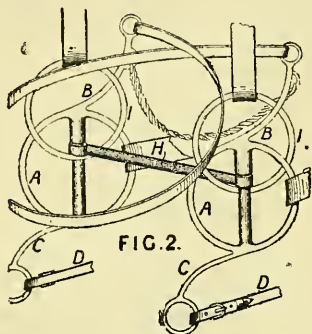
the circular body of the brush. For supporting small hand brushes driven by a crank handle on one end of the spindle, a hook is placed on the spindle between the handle and the brush, and is attached to an elastic cord having an upward tension, or to a hook with a counterbalance weight. The spindle revolves in the hook sockets, which may be arranged on one side or on both sides of the brush. The body of large circular hand brushes may be hollowed out so that the centre of the body projects on one side, while there is room for the insertion of the hand on the opposite side. A crank handle is formed on the projecting end of the spindle. A wood block is fitted loose on the spindle between the handle and brush. The lower half of the block is like a grooved pulley, but the grooved sides are carried up parallel, and a supporting cord or belt is looped round the block or hooked to it. For keeping the driving-band on the pulley of a rotary brush or a wisp rubber for horses &c., a stem from one handle is provided with an arm at right-angles having an elastic bearing and coming close to the periphery of the pulley. The band may be kept on the wheel from which the brush is driven by a double-limbed frame mounted loose on the axis of the wheel, and embracing its periphery. The friction of the band against rollers on the frame tends to carry the latter up against a stop, or guide-pulleys may be used. For brushing horses, a brush, preferably of parabolic section, is used; it is mounted on one end of the axis, and a hand hold is arranged at the other. Next to this hold is the driving-pulley, and next to this a second hand hold. The axis is made with a universal joint between the brush and the latter hold. In another arrangement, a wood centre is surrounded with stuffing covered with leather or woven fabric, and on the exterior of this is a removable cover of coarse fabric. For cleaning the rotary brushes, a curved surface with hackle teeth or steel points is

fixed to a wall &c., and the brush is held against it while rotating.

528. Taylor, J. G. Feb. 26. [*Provisional protection only*] Drawings to Specification

Dog chains are made of wire of oval section.

638. Achgelis, H. W. March 7.

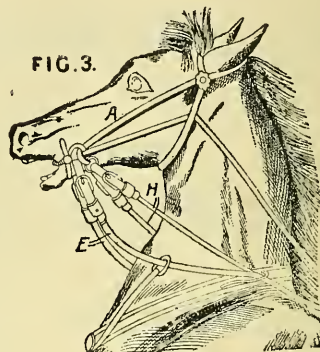


Bits; bridles.—Any suitable form of mouth-piece H is suspended from the headstall by rings I. The cheek pieces consist of rings A having rearwardly-projecting arms B for carrying the curb chain and forwardly-projecting arms C for carrying the curb rein D. A noseband may be attached to the arms B, as shown, to keep the horse's mouth closed when the curb rein is pulled. In a modification, the arms B and C are shortened so as to become mere loops.

675. Tongue, J. G., [*Hartman, S. B.*]. March 9.

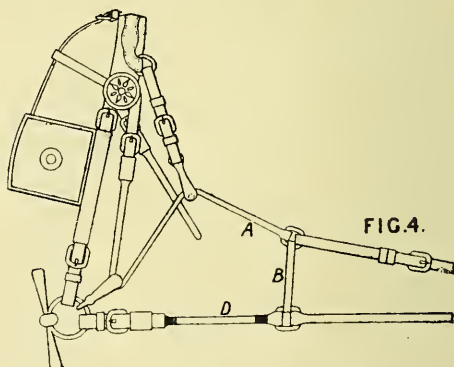
Bridles; stopping and controlling runaway and restive horses.—Relates to attachments to bridles or to the construction of the bridle itself, for the management of vicious or runaway horses. In one arrangement, a leather strap having a ring or loop on each end is laid over the horse's head, so that the ends can be passed through the rings on the bit at the sides of the mouth. The reins are fastened to the rings or loops of this strap, and when they are pulled the bit is pulled upwards in the horse's mouth. In another arrangement, shown in Fig. 3, the check straps A of the bridle pass through the rings of the bit, and are attached to supplemental reins H. The ordinary reins E pass through terrets on the saddle and through martingale rings, and are attached to the rings of the bit. The supplemental reins pass through the ordinary reins, which are hollow to receive them; they pass out at the ends of the ordinary reins, and when they are pulled the bit will be drawn upwards in the mouth of the horse. The ends of the ordinary

reins are fitted with bulbs or handles for grasping them in the hand. In a third arrangement, the check straps are doubled on each side of the horse's head, to form loops for holding the bit by its



reins. The supplemental reins pass out of the ordinary reins at or near the terret rings, pass thence round pulleys or through rings on the throat strap, thence through the rings of the bit, and are finally attached to the check straps. The supplemental reins, when used, act on the bit so as to throw the head up and prevent the horse from kicking.

853. Tongue, J. G., [*Muir, J., Ringler, M. A. W., and Kelly, S. E.*]. March 23.

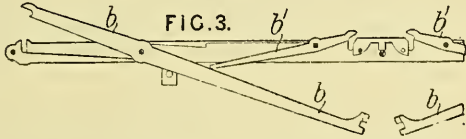


Bridles.—Elastic links D of rubber &c. are attached to the reins near the bit. These are of sufficient strength to guide the horse in an ordinary way, but, if the animal becomes fractious, the links extend, and allow of the action of gag, curb, check, or other reins A, which are attached to the main reins by a strap B and are normally loose.

875. Langin, A. F. March 26.

Runaway horses, releasing; fastening traces and pole-chains. To enable the driver to release the traces of runaway horses, the splinter-bar is fitted with an arrangement of horizontal levers b, b to

the ends of which the fastenings for the traces are attached. These levers, when closed, are all locked by a vertical bolt at the centre of the splinter-bar, and this bolt is provided with a handle within the



reach of the driver by means of which he can release the levers and thus disengage the traces. The pole crab to which the pole-chains or the like are attached is secured by a pivoted spring fastening which allows it to be withdrawn by the horses after the traces are released.

912. Clark, W., [*Macdaniel, O.*]. March 28. [*Provisional protection only.*]

Stirrups.—The stirrup is constructed with several openings for receiving the foot instead of only one as usual, so that one opening is always presented ready to receive the foot. The stirrup may be formed in various ways, that preferred being to make the base by means of three bars to form an equilateral triangle, and the head by uniting three bows or side pieces which spring from the corners of the base. The strap loop may be either fixed on the head or connected to it by a swivel.

982. Shanks, J. April 2. [*Provisional protection only.*]

Horse clippers and the like.—A cutting-cylinder is mounted in a frame, with a handle or a strap for holding it. The cutting-surface is formed of helical or other knives and an edge or plate against which the knives act extends across the frame. The cylinder is geared to rollers running over the animal's skin, and is thereby caused to revolve. The cutting-cylinder is adjustable to vary the length of cut.

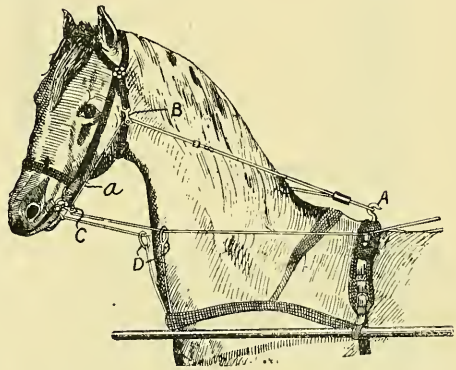
993. Musgrave, J. April 3. [*Provisional protection only.*]

Brackets for.—Consists in making harness and saddlery brackets entirely of iron. Patterns for casting them are made by bending sheet lead over the outside of wood-capped brackets. Castings are taken off the lead and dressed up as casting-patterns, or ordinary wooden patterns may be used. Collar holders are made semicircular, and with a high curve rising to the wall. Bridle holders are made "semicircular in front and side elevation and in "plan" with five half-round bars for the headstall to rest on, and a curved strip of iron in front for the forehead strap to rest on.

1001. Hills, A. G. April 3. [*Provisional protection only.*]

Bridles.—An additional check rein for controlling refractory horses is attached to the headstall just under the horse's ear; it is passed thence through the bit ring, thence through an eye or hole formed in the throat band, and thence to a ring on the saddle of the harness. At this point the rein enters the hollow driving-rein, and extends through it to a point within reach of the driver's hand. The check rein may also be used in riding.

1192. Lake, W. R., [*Clark, W., and Griffin, W.*]. April 24.



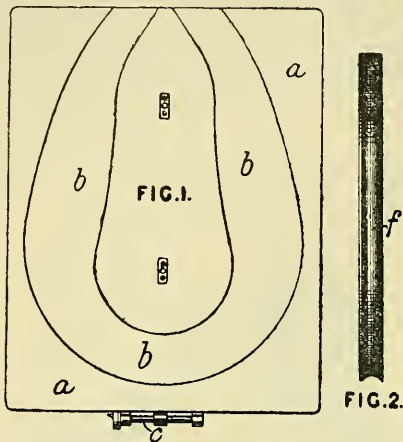
Bridles; bits.—The check rein is so arranged that it forms a part of the guiding-rein. The loop or bight of the check rein is placed on the hook A of the saddle, or each end of it may be fastened to a separate hook on the saddle or collar. Thence its two sections run on opposite sides of the horse's head, each through a loop or runner B on the throat band, thence through a similar loop or runner C attached to the bit ring, and thence the reins pass through the martingale rings D and terrets in the usual manner. The runners may be provided with rollers, or the runners of the bit rings may be dispensed with, and the reins be passed through the bit rings. Each section of the reins may be provided with a stop a to enable the driver to keep the head of the horse in a graceful position without subjecting him to an undue strain.

1301. Crossley, T. May 3. [*Provisional protection only.*]

Whips.—Consists in combining a portable oil or candle lamp, and, if desired, a match box, with a whip or similar article. In the end of the stock, which is made hollow and forms an oil reservoir, is placed a wick-tube with burner nozzle and a screwed shoulder for securing it to the stock. The apparatus, when not in use, is covered by a cap which screws on, and may be formed to contain matches. When candles are used, a helical

spring and nozzle, as in carriage lamps, are employed. A glass frame protector may be screwed to the stock.

1343. Smith, R. May 7.



Collars, neck, making. Blocks or moulds of hard wood are used in making the collars. To make the ring or roll of the collar, a roll block *f*, Fig. 2, the outer edge of which has the figure of the inner side of the ring or roll of the collar, is screwed to the flat side of a body block *a*, Fig. 1, which has in one side of it a depression *b* of the figure of the body of the collar. A flat piece of millboard or wood, which continues the shape of the body and enables the body when completed to be easily removed from the mould, is placed between the two blocks. A piece of leather to form the ring or roll is punched with three rows of stitching-holes; it is then damped, passed round the hollow edge of the roll block *f*, and kept in its place by a cord which is tightened by a straining-rod *c* at one end of the body block. Straw stuffing is then inserted in the hollow of the leather strip, beginning at the middle, and the edges are sewn up, the workman at the same time stitching to the leather of the roll the cloth or leather of which the body of the collar is to be made. The roll block *f* and the millboard are then unscrewed, and the roll block containing the roll (now formed) is reversed. The body block also is reversed, and the roll and middle blocks are screwed thereto. The cloth or leather for the body falls into the depression *b*, and the workman laces long straw into the throat of the body. When the throat is stuffed, he bends the long straw and lays it in the hollow of the body block, and then stuffs up the body, lacing and stuffing alternately until the body is finished. In order that collars of different sizes may be made from the same blocks, the blocks are in some cases made of several pieces capable of being expanded and contracted.

1395. Knight, J. A., and Bastand, C., [Knight, N., partly]. May 11. [*Provisional protection only.*]

Nosebags.—The nosebag is made of canvas or other textile fabric, and is ventilated by the insertion of one or more pieces of perforated zinc or wire gauze. The bag is suspended by straps, bands, or chains, which pass over or through pulleys or rings on the top and in front of the horse's head, and are carried back and attached to the saddle, or other part of the harness, or to the shafts or other part of the carriage.

1630. Albright, A. June 1. [*Provisional protection only.*] *Drawings to Specification.*

Saddles; terrets and like guide-rings; fastening, hooks for. Buckles, saddle-trees, hooks, terrets, and other metallic trimmings for harness and carriages are coated with vulcanized india-rubber, or gutta-percha or other gum, to protect them from rust &c.

1647. Johnson, J. H., [Richmond, E.]. June 4. [*Provisional protection only.*]

Whip-hanging devices.—Relates to racks or holders for canes and other like articles. A sheet of vulcanized rubber is held between two perforated plates of wood or other material, and radial slits are cut in that portion of the rubber which extends across each of the perforations. The rubber may have perforations smaller than, but concentric with, those in the plates. The rubber may be replaced by spring plates to suspend a whip or lash. There are V-shaped openings formed in the edges of the plates, and smaller similar openings in the rubber, which is thus uncovered. If the rack is placed some distance above the ground, a wire or other guiding-device is added; it consists of two parts bent at right-angles, one being inserted in the top of the rack, while the other extends across the opening. Modifications of the brackets are made with split pins, some inserted in a board which is fixed to the wall.

1740. McMahon, D. E. June 14. [*Provisional protection only.*]

Saddles.—Relates chiefly to pack-saddles, but military riding saddles may be adjusted as regards size in a similar manner. The saddle-trees of a pack-saddle are connected at the top over the back of the animal by two screws. When the screws are turned, they either draw together the parts wherein they are fitted or cause them to recede, and they can be independently adjusted. The screws are fitted with ball-and-socket joints, and each extends across into the opposite saddle-tree, where it screws into a cylindrical nut contained in a corresponding socket or recess. Each pack-saddle has two pair of trees arranged one at the

back and the other at the front ; they are connected by side bars, and by a bar passing from one pair to the other over the back of the animal. The last-mentioned bar has a face-plate at each end, and each face-plate has two slotted holes in it, and screw bolts are passed through these holes and also through the upper parts of the saddle-trees and receive locking-nuts.

2517. Pierce, G. H. Sept. 5. [*Provisional protection only.*]

* *Pads for ; collars, neck ; saddles.*—Relates to a pneumatic padding for horse collars, saddles, and harness. A cushion made of india-rubber strengthened with canvas or other fabric is attached to the inside of the collar &c., by means of a solution of india-rubber or other waterproof cement, and is charged with air.

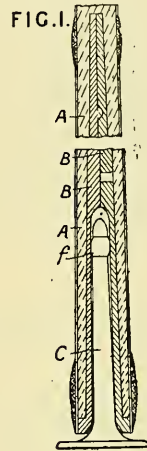
2630. Clarkson, T. C. Sept. 19. *Drawings to Specification.*

Materials ; traces ; bridles.—Consists chiefly in the employment of West Indian cork wood in combination with other materials partly described in Specifications No. 12,466, A.D. 1849, No. 84, A.D. 1856, and No. 2579, A.D. 1863, for making various equipments for military, naval, and civil purposes. Harness for military and other purposes, consisting of thin flexible flat and round straps, traces, and reins are made with a strip of prepared leather cemented on the centre and on the top of the internal web instead of the layer of sheet cork

as described in the previous Specifications, so that the edges of the outer leather covering adhere closely together on the middle of the strip of prepared leather. The cords or web before being coated with india-rubber are treated with zinc chloride or other desiccating-fluid ; they are then roughened by rubbing them with glass paper, and are coated with the india-rubber solution. The articles, when finally covered with leather, may be passed over a toothed wheel to give them the appearance of being sewn.

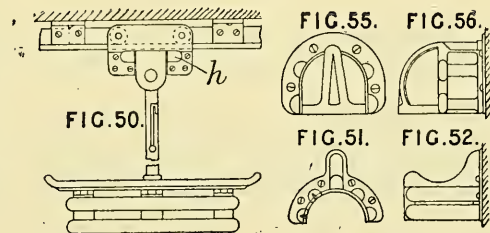
2653. Newton, W. E., [Gibson, J.]. Sept. 20.

Whips ; whip holders.—The butt end or handle portion of the whip stock A is recessed, and into the recess is inserted a loaded socket B, made preferably in halves riveted together. The holder is a metallic or other stem C, with a base whereby it can be fixed on to any convenient part of the carriage, and with a groove near the upper end for receiving an elastic ring or band f. The whip may be more effectually secured on the stem by screwing it on at the base, or by means of a bayonet-joint.



2698. Musgrave, J. Sept. 25.

Brackets for.—A collar bracket is shown in Figs. 51 and 52, and a bridle bracket in Figs. 55 and 56. They are made of metal with the bearing parts capped with polished wood, or they may be constructed entirely of corrugated metal. Fig. 50 shows a support for use in cleaning saddles. It is hung from a carriage running on rails fixed on the ceiling of the harness room. The leaves h are hinged so as to hang loose, but, when opened out, they form an A-support.



2797. Ellis, R. Oct. 4. [*Provisional protection only.*]

Runaway horses, releasing ; fastening.—The traces, breeching, backbands, or pole-chains are secured by pins, springs, or studs &c. which can be liberated by the driver by means of a cord, chain, or lever, so as to release the horses from the vehicle. The shafts or poles may be detached in a similar manner from the splinter-bar or other part of the vehicle.

2897. Leveson, H. A. Oct. 15. [*Provisional protection only.*]

Saddles.—Relates to pack-saddles which can be adjusted to fit any size of animal. The tree of the saddle consists of one or more (by preference two) pairs of iron bars, and the bars of each pair are pivoted together like a pair of scissors. The bars are kept open at the required angle by a stay fitted to their upper part and pierced with holes, through one or other of which a pin is passed to hold the bars in place. The lower ends of the tree bars carry the ordinary pads, and the upper ends vary

in shape according to the description of load which they are intended to carry.

3058. Johnson, J. H., [Richmond, E.]. Oct. 30. [Provisional protection only.]

Whip-hanging devices.—Relates to racks or holders for whips, canes, and other like articles. The frame is composed of two perforated plates of wood or other material and a sheet of vulcanized rubber held between them. In that portion of the rubber which extends across the perforations, radial slits are cut so as to allow the handle of a whip &c. to be forced through. The rubber may have also circular perforations smaller than, but concentric with, those in the plates. The whip &c. is suspended by the frictional grip of the rubber. Instead of the rubber sheet, other clipping-devices may be employed. If the whip is to be suspended by its tip or lash, V-shaped openings are cut in the edges of the plates, and smaller similar openings in the parts of the rubber, which are thus uncovered. If the rack is fixed some distance above the ground, a wire or other guiding-device is added. Some racks consist of split pins, somewhat like clothes pins, inserted in a board which is fast to the wall.

3258. Lake, W. R., [Albright, A.]. Nov. 16. Drawings to Specification.

Saddles; terrets; fastening.—Buckles, saddle-trees, terrets, hooks, and other metallic trimmings for carriages and harness are covered with india-rubber or gutta-percha to protect them from rust &c. The coating is moulded round the article, and vulcanized in the mould in the ordinary manner.

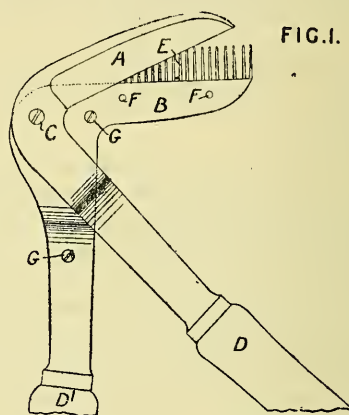
3438. Gardner, H. F., [Dale, W., and Gardner, G. H.]. Dec. 3. [Provisional protection only.]

Bits.—The bit consists of a curved bar extending on each side "from the nose strap or other portion" of the head strap (to which it is attached by a "ring") to the horse's mouth, at which point it is

"connected to the bit bar by means of a bit through which it passes, and is then attached to the bridle rein by a metal loop or ring." A disc or small plate of leather or metal on each side protects the horse from injury by the curved bar. When the reins are pulled forcibly, the curved bar is drawn upwards and backwards, and "the bit itself" is drawn against the commissure of the horse's "mouth, opening his mouth wide, throwing his head upwards and backwards, thus preventing his kicking or running."

Stirrups.—Rollers are attached to "the vertical side bars" of the stirrup to prevent the foot of the rider from being passed too far through the stirrup. The stirrups may be formed with four side bars.

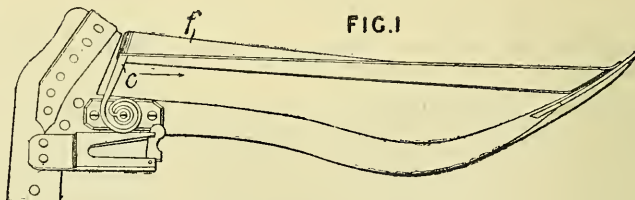
3498. Clark, W. Dec. 9.



Horse clippers and the like.—Relates to apparatus for clipping horses, cutting human hair, &c. The two blades A, B are hinged at C, and connected to handles D, D' which are bent and slightly cranked. Stops G, G' limit the motion of the blades; or one blade has a slot in which works a pin on the other blade, for the same purpose. A comb E is secured by screws F, F' to the back of the blade B. Or one blade may be worked by a crank, wheel, or spring, or be made with an inclined cutting-edge and receive a reciprocating motion.

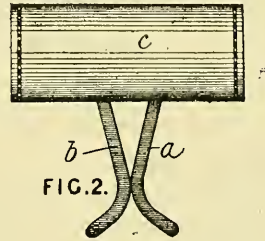
3611. Clay, J. Dec. 19.

Saddles.—To impart elasticity, a spring *e* with coiled ends is fixed to the front of the saddle-tree. The web *f* which forms the foundation of the seat is passed round the spring, and its ends are attached to the back of the saddle-tree. The spring may be fixed at the rear portion; or there may be a spring at the head and another at the rear, in which case two webs will be required.



3666. Hewitt, W. Dec. 24.

Rein-holders; whip-hanging devices.—Relates to spring clips for holding reins, whips, billiard cues, penholders, cigars, and other cylindrical articles, and consists of improvements on the invention described in Specification No. 380, A.D. 1862. Fig. 2 shows a rein or whip holder consisting of two spring tongues *a*, *b* fixed to the ordinary clip *c*, which is attached to the dashboard of a vehicle; or the tongues may be attached to any part of the vehicle. For holding whips, the tongues may be made in one piece, being bent upwards from a plate which serves to attach the holder to a vehicle or to a board &c. The spring tongues may be covered with leather or japanned.



A.D. 1868.

187. Fisher, G. S. Jan. 18. [*Provisional protection only.*]

Fastening.—Relates to split links or rings for coupling to other links or to parts of harness or other straps and bands. The link is made of wire bent to the form of a ring. The ends of the wire are flattened and lapped over each other, the split or division being between them. The split is widened at the exterior of the link to form a V-shaped mouth which facilitates the insertion of the part to be attached. In order to form a buckle for attachment of the link to reins or other straps &c., an additional loop or eye is formed by bending the wire, and a movable tongue or catch is fitted to the same in the usual manner.

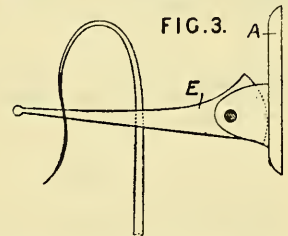
451. Tucker, H. C. Feb. 10. [*Provisional protection only.*]

Horse clippers and the like.—Relates to apparatus for shearing or clipping sheep and other animals. A set of reciprocating cutters are mounted at the front edge of a box or case with a handle. Reciprocating motion is imparted to the cutters by a shaft mounted at right-angles to the direction of the cutters and terminating in a crank arm. The shaft is partially rotated alternately in either direction by means of an escapement-wheel keyed on a spindle which is operated by a spring and

train. This partial rotary motion imparts a reciprocating motion to the cutter-bar above a row of fixed cutters. A spring of sufficient power to regulate the action of the cutters is fixed on the cutter bar. Instead of a spring the cutters may be operated by a crank handle.

494. Lake, W. R., [*Talcott, D.*] Feb. 13.

Whip-hanging devices.—The whip is hung between two curved fingers *E* pivoted to lugs on a plate *A* which is fixed to the wall. Between the lugs is a wedge-shaped piece formed on the plate *A*, which acts on the ends of the fingers *E* so as to cause the fingers to grip the whip firmly.

**523. Taylor, J. G.** Feb. 17. [*Provisional protection only.*]

Dog chains.—Relates to puzzle chains, stated to be applicable as dog chains, the links of which are

formed of wire with bent rings at each end, so arranged that they can only be coupled or uncoupled when held in certain relative positions.



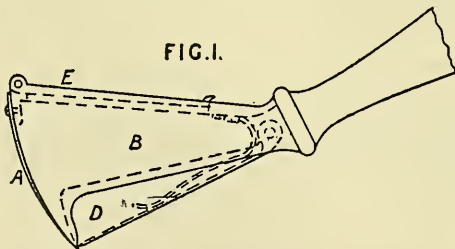
573. Lake, W. R., [*Higham, J. A. B.*].
Feb. 20. [*Provisional protection only.*]

Horse clippers and the like.—Relates to apparatus for shearing and clipping sheep &c. A rotary cutter is connected to a turbine wheel or rotary engine driven by steam, compressed air, or water supplied through flexible pipes. The shaft of the engine or turbine carries a pinion on or near its extremity; this pinion gears into a toothed wheel which runs on a pin or stud fitted in a lug on the outside of the perimeter of the case. On the side of this toothed wheel are two studs which fit into holes in the body of the cutter. A steel plate is attached to flanges on the under side of the case, and a portion of its circumference is cut to form a comb. A guard plate keeps the wool or hair of the animal from passing beyond the comb. The length of the hair left on the animal is regulated by the thickness of the comb. The cutter may be worked from an eccentric in a similar manner to the cutter-bar of a reaping-machine.

741. Lewthwaite, J. March 4. *Drawings to Specification.*

Saddles; materials.—Relates to the treatment of parkesine for use in making saddles and harness &c. The parkesine is applied in a plastic state to a backing of paper, calico, &c., and submitted to pressure, and, if desired, it may be polished and ornamented by transferring designs on to it or by embossing, colouring, &c. In some cases, two or more fabrics may be united by layers of parkesine, or they may be first coated and then united. The fabrics &c. may be stripped from the parkesine, leaving the latter only.

772. Price, D., and Rowe, C. March 6.



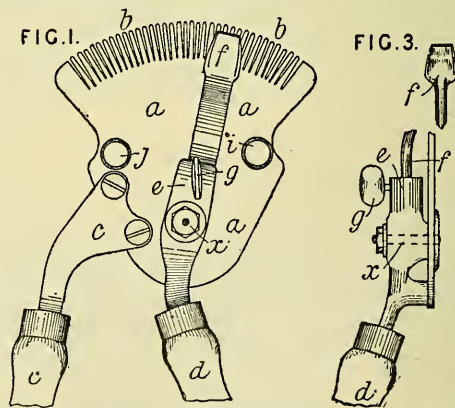
Combs.—Apparatus for combing animals and removing parasites consists of a steel or other comb A mounted on the front of a receptacle B, which is closed at the bottom by a hinged spring plate D

with turned-up sides. The edge of the plate fits against the points of the comb teeth. The parasites removed by the comb pass into the receptacle, which is fitted with a transparent or other lid E.

818. Lake, W. R., [*Lowrey, R. O.*].
March 9.

Materials.—Relates to a composition consisting principally of vegetable fibre treated or united with chemicals, for producing soft waterproof and fireproof paper, cloth, leather, &c. for use in the manufacture of harness &c. The fibre, pulp, paper, &c. is saturated or otherwise treated with a solution of gelatine or animal glue, soap or like matter, and glycerine or saccharine matter; the material is then treated with an astringent solution which will render the gelatinous solution insoluble in water, a solution of an aluminium salt and common salt being preferably employed. If desired, the two solutions may be mixed. In place of the gelatine solution, gum arabic or senegal, dextrin or casein, or albumen, gluten, starch, or a mixture of any of these with or without gelatine or glue, may be used; and in place of the astringent solution tannin or tannic acid, catechu, gallic acid, boracic acid, alum, borax, any of the salts of the sesquioxide of chromium, sodium chloride, &c., or a mixture of any of these, may be used. For giving body to the material, clay or aluminous earths, plaster, ground slate or stone, or metallic oxides may be added to the fibre or pulp; pigments or colouring-matters may be added to the gelatinous compounds, especially when a coating is required on the paper &c. The surface may be enamelled or polished, and painted upon. For more completely fireproofing the material, ammonium sulphate or phosphate, sodium tungstate, borax, magnesium sulphate, carbonate, or chloride, &c. may be mixed with the gelatinous solution.

866. Salom, S. H., and Field, T.
March 13.



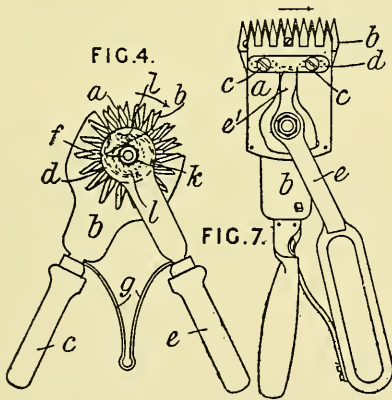
Horse clippers and the like.—A segmental plate a, Fig. 1, cut with radiating teeth b resembling a

comb, carries a handle *c* for holding the appliance, and a shank or handle *d* which oscillates on a centre pin *x*. The upper end of the shank *e* is formed into a socket, into which a cutter *f* is inserted and held by a tightening-screw *g*. Stud *i*, *j* screwed into the comb plate regulate the stroke of the cutter. The teeth of the comb pass between the hair of the animal, and the cutter is caused to oscillate on its pivot to cut off the hair between the teeth. Fig. 3 shows a modification.

876. Clay, J. March 14.

Saddles; pads for.—The trees of harness saddles or harness pads are made of iron or other metal or alloy cast or stamped. When cast, they may be lightened by forming openings in them. The tree is made in one or more pieces. If a cantle is required, it is made of metal or other hard material and separately from the tree, and is fixed thereto by a bolt at the back and "the usual hook or stop knob at the front" of the tree. The upper side of the tree and the cantle are covered with leather, or the cantle, if of metal, may be enamelled. The flaps are made in the usual manner; they are riveted to the tree, and are stitched to the top leather.

1053. Adie, P. March 27.

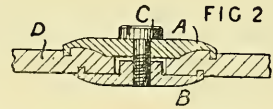


Horse clippers and the like.—Relates to apparatus for clipping horses, shearing sheep, &c. Fig. 4 shows one form with a rotary cutter. The back plate *b* is made with a series of points or cutters, and above it rotates a disc cutter *a*. The points or cutters may be made in one with the disc or plate, and have a spring action like the blades of a pair of scissors, so that, when the faces are pressed together, the cutting-edges are always in close contact at their point of meeting. The clippers are held by a handle *c*, and worked by a second handle *e* attached to a box *d* carrying two spring pawls *l* acting on a ratchet-wheel *k* attached to the rotating cutter *a*. The back plate, cutter, and box are held together by a pin *f*. A

spring *g* forces the handles apart. This arrangement gives an intermittent rotary motion to the cutter; in other forms it is driven by a cord and pulley &c., or two cutting-discs, both rotated, are used. In another modification, shown in Fig. 7, a rectilinear motion is imparted to the blade *a*, which travels over the back-plate *b*. The cutting-points are made with two cutting-edges, and those of the plate *a* are formed with a spring inwards. The plate *a* has slots working on guide-screws or bolts *c*, *c* which also carry a spring plate *d* which forces the working faces together. This form of spring may be applied to clippers such as are described in Specification No. 2796, A.D. 1866. The back plate is bent upwards to bear on the lower edge of the plate *a*. The handle *e* carries an arm *e'* working in a slot in the plate *a*, and giving it a throw or traverse equal to the distance from the centre of one tooth to that of the next.

1108. Clissold, W. April 1.

Fastening.—Relates to means for fastening driving-belts, applicable also for uniting parts of harness.



The ends of the band *D* are united by clamping-plates *A*, *B* having ribs on their inner surfaces and connected by a screw or screws *C*. For narrow belts, the plates are circular and united by a single screw; for broader belts, the plates are rectangular &c., and two or more pairs may be used, each having two screws. Additional ribs may be formed on the plates.

1299. Renshaw, A. D. April 21. [Provisional protection only.]

Horse clippers and the like.—Relates to apparatus for shearing sheep and clipping animals, in which reciprocating cutters, working in both directions, move across the edges of fixed cutters. The fixed cutters are formed on or attached to a metal plate connected to the handle. The edges of the cutter are made so that each pair of blades has a scissor action. The blades may be cut out of the plates, or made separately and secured to them. The two sets are kept parallel by guide-pins &c., and are kept closely in contact by an adjustable presser-bar regulated by a screw &c. The cutters are moved by a spring barrel supported in a bearing secured by a strap to the waist of the operator. On the barrel is wound a cord the end of which is pulled by the hand. On a wider portion of the barrel is wound an elastic or weighted cord connected to an eccentric, cam, or lever on the cutter. Or the cutter may be driven by other motive power, provision being made by elastic cords &c. for moving it about the body of the animal. Antifriction balls or rollers are placed between the cutter plates near their rear edges. The balls roll in grooves in one or both plates.

The presser-bar rests at one end on a projection on the shank, and the other end, which may be branched, is fitted with balls or rollers pressing on the moving plate. The regulating-screw is secured to the fixed plate and passes through slots in the moving plate and the presser-bar; the pressure is adjusted by a nut on the end of the screw. The actuating-cord passes through the handle, which is fitted with guide-pulleys. When a lever is used to move the cutters, it may be operated by a pulley carrying an eccentric pin, and turning on a stud in front of the handle. The pulley is rotated by a cord passing round it and round a pulley connected with the driving-mechanism. Or the lever may be worked by the hand direct. The regulating-screw may act as the pivot of the lever. The boss of the lever may lie in an aperture in the moving plate, and carry a finger or stud to act on the plate. When the lever is worked by a handle, the cutter is returned by a spring secured to the presser-bar &c. and bearing against a pin on the plate. The apparatus is fitted with a guard or cover to protect the mechanism and prevent the hair or wool from becoming entangled with it. This cover may be of steel and take the place of the presser-bar. An adjustable comb for regulating the length to which the hair is cut is secured by screws to the cover or fixed plate; the teeth of the comb extend beyond the teeth of the cutters.

1373. Geraci, D. April 27.

Materials.—Raw fibrous material or woven or spun materials are mixed or coated with a paste made by adding a solution of aluminium sulphate to potato or other starchy substance. The materials are pounded, pressed in hydraulic presses, and afterwards passed between rolls; they are applicable for making harness.

1534. Boucher, A. D. E. May 11.

Whips.—Enamelled cast iron is used instead of crystal or china in the manufacture of various articles, such as the heads of whips.

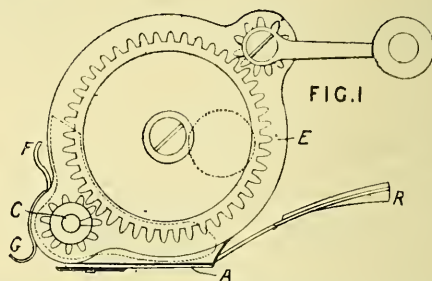
1545. Pope, T. May 12. [*Provisional protection only.*]

Currycombs.—The teeth are preferably formed of notched or serrated plates placed perpendicularly and parallel to each other upon the back or stock, and curved at their acting surfaces, so that the comb can readily adapt itself to the form of the animal. For cleansing the teeth, a plate formed with apertures or slots to fit the teeth is drawn over them, so as to remove the hair &c. The plate is hinged to one side of the back, and lies flat thereon when the comb is being used. By preference the hinge is provided with a spring arranged to keep the plate closely in contact with the back.

1721. Lake, W. R., [Folger, J. B.]. May 25. *Drawings to Specification.*

Lining and padding; collars, neck; saddles.—Consists in using india-rubber or its compounds for the bearing-surfaces of collars, saddles, and pads, and a coating of india-rubber or other waterproof material between the stuffing of collars, saddles, or pads, and their covering. A fabric (strong and thick for heavy collars, but lighter for saddles and light collars) is coated with vulcanized rubber, or, if the cloth side is to be used next the skin, with a waterproof cement. A mixture of fibrous materials, such as cotton or linen, with the rubber before it is vulcanized makes a stronger and smoother fabric. In a collar, the coated fabric extends round the inner surface of the body from the roll to the outer leather, and if required a reinforce of leather is placed around the edges. In a saddle the lining is placed with either the rubber or cloth surface next the back of the horse.

1772. Griffiths, H., and Wishart, F. A. May 29.



Horse clippers and the like.—A flat cutting-plate, with one edge sharpened to a suitable angle, is used. The plate may be shaped like a plane-iron or razor, or may be hollowed like a skate blade. The thickness of the plate is varied according to the length of the hair to be cut. A metal comb is secured to the lower side of the plate, with its teeth projecting beyond the cutting-edge of the plate. The comb may be formed in one with the plate. For close clipping, the plate is made thin, with strengthening ribs or corrugations. The plate may be curved for special purposes. In the form of clipper shown in Fig. 1, the blade or plate A is fixed in two side frames E having bearings C for a spiral cutter working in connection with the plate A, and covered by a guard G with a curved projection F to be grasped by the operator. The cutter is driven from a crank handle through spur gearing as shown, or by belt gearing, springs, &c., or by friction rollers run over the animal's body to actuate the cutter shaft through suitable gearing. Or the clipper may be driven from an independent motor through belts, pulleys, and bevel gearing. The clipper is held by a cross-bar, and the wrist of the operator is supported by a leather-covered metal rest. In a modification, the spiral cutting-blade "works with a partially-circular motion upwards and downwards." In

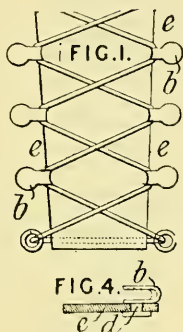
this machine the cutter is driven by an oscillating hand-lever. In a third form, a second steel cutting-blade, flat at one end and with a slight increasing spiral curve, is pivoted above the first, and is worked backwards and forwards by a handle &c.

1947. Leonard, W. June 15. *Drawings to Specification.*

Collars, neck.—The parts of the collar which bear against the horse are made with a waterproof and "desiccative or medicated" covering consisting of strong cloth coated with vulcanized caoutchouc or gutta-percha containing sulphur or other medicament possessing curative or healing properties.

2140. Clark, A. M., [*Gobin, F. J. G., alias Daude*]. July 4.

Fastening.—A lacing-fastening for boots, shoes, gaiters, leggings, harness, &c. consists of a series of hooks *b* round which the lace is passed as shown in Fig. 1. The hooks *b* are formed with shanks *d*, Fig. 4, which are riveted into eyelets in the boot &c. *e*.



2147. Whitehead, J. H. July 6.

Saddle cloths; clothing for animals.—Numnahs or saddle pads and numnah blankets are made of wool or other felting fibre, felted upon an open fabric or net of linen or other material, or upon a woven horse-hair fabric.

2180. Nuttall, T., [*Sullivan, E.*]. July 9. [*Provisional protection only.*]

Collars, neck; saddles; lining.—That portion of the collar, or of a riding or harness saddle, or other harness, which is brought into contact with the horse, is covered or lined with a waterproof fabric, such as a kersey or other elastic fabric coated with caoutchouc or gutta-percha.

2202. Willis, J. N., and Judd, S. July 13. *Drawings to Specification.*

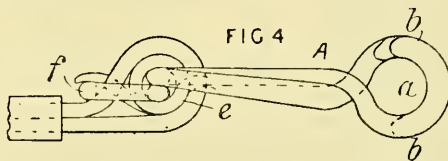
Currycombs.—The handle of a currycomb is made of india-rubber &c., and forms a syringe for

supplying liquid to perforations in the comb. The flow may be regulated by inserting pieces of sponge in the supply tube.

2207. Munro, A., and Adamson, W. B. July 13.

Stirrups.—Stirrup-irons are made by running molten crude iron or molten pig iron into chills of the required shape. As soon as the casting is solidified, it is taken from the chill and cooled in water or otherwise, or it may be allowed to remain in the chill for a longer time, or the chill may be cooled with water. The iron before being cast may be partly refined by blowing atmospheric air into its mass, or by placing compounds of oxygen into the vessel or furnace wherein it is refined. The castings are afterwards annealed or tempered. A similar treatment may be applied to alloys, and to mixtures of iron with tin, copper, lead, &c.

2244. Lake, W. R., [*Fisher, G. S.*]. July 16.



Fastening, couplings and buckle attachments for. A divided ring for coupling straps, bands, or links or fastening reins &c. is made by bending brass, iron, or other wire so that the ends overlap as at *b* to form the eye *a*, the ends being partly flattened so as to fit properly together, but so that they can be readily opened for inserting the link or other article to be fastened. The wire behind the eye may be bent to form a loop *A* for attachment of the strap &c.; or it may be made in the form of a buckle by bending it to form an additional loop *f* and attaching a tongue *e*.

2245. Davis, S. July 16. [*Provisional protection only.*]

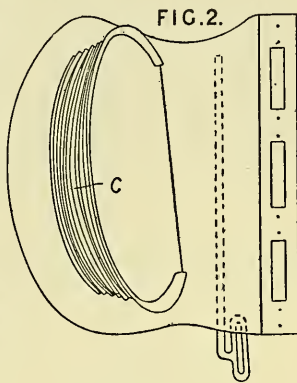
Horse clippers and the like.—The object is to arrange an apparatus for clipping horses, sheep, &c., so that it may be readily used with one hand only. Teeth, formed on the front end of a plate or frame, act as blades against which the hair is cut by the movement of a cutter mounted upon a centre at the back part of the plate. The cutter consists of a lever actuated by the thumb, fingers or one hand of the operator to move over the face of the cutting-edges of the comb. Or it may be arranged to act "as a slide in place of a lever," and it may be made with one or several cutting-edges. The cutter is brought back to its normal position by a spring.

2335. Ritchie, C. July 25. [*Provisional protection only.*]

Sun and weather screens.—Relates to coverings for protecting the head or body from the sun, rain, or weather. In the case of animals, the covering is supported on the body or is attached to the harness &c. by supports fixed by straps &c.

2604. Niepce, E. J. E., [*Niepce, J. I.*] Aug. 21.

Bridles; stopping and controlling runaway and restive horses.—On the inside of each blinker is a bellows-shaped cap C which, while the blinker is being used in the ordinary way, lies in a collapsed condition flat against the surface of the blinker; but, if the horse runs away or is skittish, the driver controls it by pulling a rein connected with a spring hinge, not shown, by which the collapsable cap is hinged to the blinker, thus causing the cap to turn on its hinge and completely cover the horse's eye. The two blinkers may be connected by cross straps in front of the horse's head.



2648. Dawson, J. Aug. 26. [*Provisional protection only.*]

Tugs, shaft; fastening.—To allow of a fallen horse being quickly released, the shaft-tug consists of a hooked support for the shaft of a carriage; it is fastened to the backband, and has projecting side plates which are strapped to the shaft. The hook and its projecting side plates are formed with flat surfaces for the strap to bear against. The two projecting side plates may be connected by one or more bars or cross-pins to keep the strap in place.

2878. Clark, W. Sept. 18. [*Provisional protection refused.*]

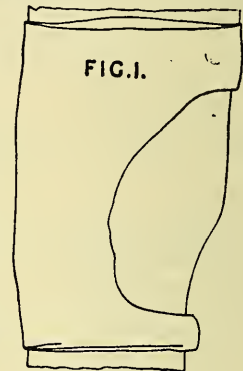
Horse-boots.—An elastic padding consisting of hair, feathers, cork, or other stuffing, or india-rubber, or a receptacle inflated with air, is applied to a horse-boot made of leather, linen, &c., either on the inside or the outside, in such a way as "to protect the back sinews, tendons, ligaments, "and shin bones."

2999. Dalrymple, G. A. F. E. Sept. 30. [*Provisional protection only.*]

Horse clippers and the like.—An apparatus for clipping horses, shearing sheep, and other similar purposes consists of a metal case enclosing a revolving knife or knives driven by a cord passing round guide-pulleys and through the handle of the case. The knives are circular or segmental in shape. The hair is divided by teeth on the edges of the case, and cut off by the knives. The machine may be driven by hand or power.

3047. Ramsay, R. Oct. 6.

Knee-caps; horse-boots.—A knee-cap is made of soft india-rubber moulded to the shape of the horse's leg and vulcanized. It is passed over the hoof and retained in place, as shown, by its own elasticity; it serves also as a boot to prevent the horse from cutting himself.



3078. Prévost, E. Oct. 8. [*Provisional protection only.*]

Controlling restive horses.—An electric current is passed through the bit by wires which may be concealed in the reins. The current may be generated by a magneto-electric machine under the box seat of a vehicle, or arranged in a riding saddle.

3302. Kelson, C., [*Marshall, C. K.*] Oct. 28. [*Provisional protection only.*]

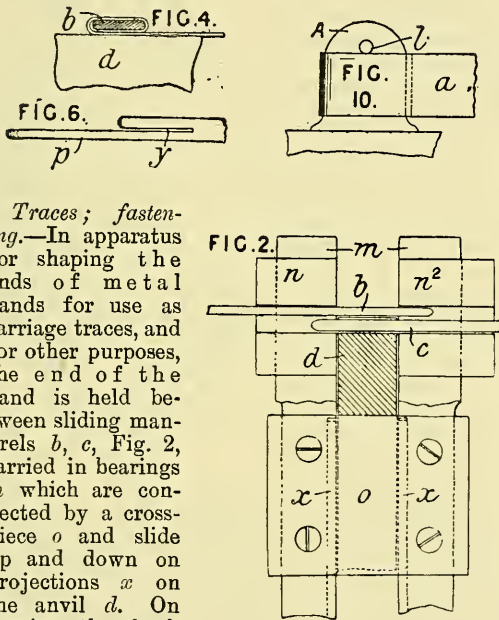
Collars, neck.—Horse collars are made "hollow "and of a semi-shell shape form"; they are made lighter, and their elasticity is increased by means of circular, oblong, or other shaped perforations. Within the concavities of the collar plates are secured the rein eye and the trace clip, both of which may be secured by independent bearings, or be attached to a 'hame bow,' in which case the hames are permanently secured to the collar.

3364. Edwards, J. Nov. 5. [*Provisional protection only.*]

Fastening traces, collars, &c. Roller bolts are made hollow and provided with slots so that the

traces, which are formed with thickened ends, can be dropped in from above. Caps are provided for covering the openings. Backbands are jointed in the middle to enable the tug and backband to be made in one piece. Hames are each made with a screw at one end to attach a chain for connecting the ends of the hame. Rollers or projections are applied inside the tugs "to prevent rubbing the saddles." Consists "also in making screw cock-eyes for shortening traces. Also in making the bearers of double harness to terminate in a spring to prevent the traces lifting up the bearers "when the horse is drawing."

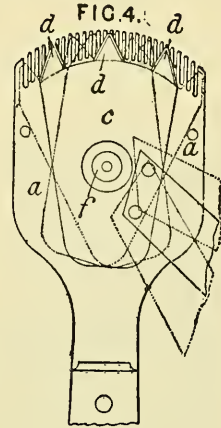
3417. Riddle, W. Nov. 10.



Traces; fastening.—In apparatus for shaping the ends of metal bands for use as carriage traces, and for other purposes, the end of the band is held between sliding mandrels *b, c*, Fig. 2, carried in bearings *m* which are connected by a cross-piece *o* and slide up and down on projections *x* on the anvil *d*. On turning the bush *n* by a handle, the mandrels revolve and bend the hoop on the anvil; the mandrel *c* is then withdrawn and the continued rotation of the bushes *n, n*² brings the hoop into the form shown in Fig. 4, a blow of a hammer completing it before withdrawing the mandrel *b*. The bushes *n, n*² may be connected by toothed gearing. In place of two mandrels a solid fork, as shown in Fig. 6, may be used, the band ends being placed between the prongs at *y*; in finishing, the loop is slid to the part *p* and hammered or pressed. The fork device may be worked in bearings. In the case of traces the looped band *a* is passed over a stanchion *A*, Fig. 10, fixed to the carriage, and is retained by a pin *l*.

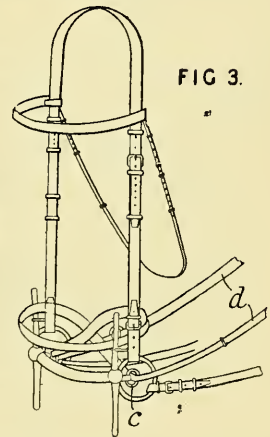
3664. Tidmarsh, J. Dec. 2.

Horse clippers and the like.—The teeth of the comb plate *a* are parallel instead of radial, and the cutters *d*, which may be either formed in one piece with the plate *c* or attached thereto, are also made with their centre lines parallel instead of radiating to the centre pin *f*, by which the plate *c* is pivoted to the comb plate *a*.



3754. Griffiths, W. Dec. 10.

Bits; bridles.—To afford control of the animal without the use of a curb chain, the bit is provided at each end with a supplementary ring *c*, through which are passed safety reins *d*. These reins cross each other under the lower jaw of the animal, and then pass round the upper jaw, so that, when they are pulled, the jaws will be compressed and the animal will thus be prevented from taking the bit in his teeth.



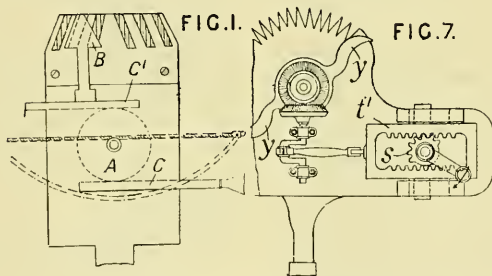
3921. Hookham, G. Dec. 23. Drawings to Specification.

Traces; straps and bands.—Straps and bands for traces &c. are formed of steel strips which are tinned or otherwise coated to prevent rusting, in addition to which they may be covered by winding them with wire and rendered waterproof by a further covering of gutta-percha &c. For some purposes a line of gut is bound with wire, or a hempen line, treated with a solution of gutta-percha, is used instead. A cord or band may also be made by covering a flat steel strip with leather or gutta-percha.

A.D. 1869.

5. Smith, G. Jan. 1. [*Provisional protection only.*]

Horse clippers and the like.—The apparatus is provided with a band saw or band knife passing between a double comb and mounted on pulleys fixed on two spindles driven by pinions from a central spindle which is actuated by a barrel spring. The comb is roughed or barbed on the inside, so as to detain the hair or wool when the knife is brought into action. The knife band will be brass, copper, or leather with a steel cutting-part.

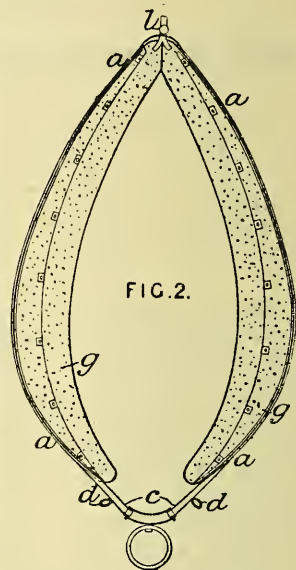
199. Lake, W. R., [Rawlings, E. H.]. Jan. 21.

Horse clippers and the like.—Relates to apparatus for shearing animals and skins, in which a cutting blade is caused to reciprocate over the teeth of a comb. Various arrangements are employed for giving motion to the blade. In the arrangement shown in Fig. 1, the blade B is moved by a rack C' gearing with a pinion A which is rotated either by a hand-operated rack C or by a bow as shown in dotted lines; or it may be pulled in one direction by a handle and carried back by a spring. In another arrangement, four or more blades may be arranged to turn on an axis which is rotated by a crank handle, or the axis may be carried by an epicyclic pinion gearing with an internally-toothed wheel. In another arrangement, a single blade is caused to oscillate on a pivot by the action of a pinion gearing with a toothed segment operated by handles, or the oscillation may be obtained by using an archimedean screw. Fig. 7 shows another arrangement, in which a mangle motion, t' operated by a crank handle rotates the blades y by means of a connecting-rod and crank and bevel gearing. An oscillatory motion of the blade or blades may also be obtained by a pinion gearing with pins on a mangle-wheel.

302. Andrews, A. S. Jan. 30.

Collars, neck.—

The pad g is made of india-rubber, American cloth, or other airproof material, and is inflated with air or other fluid through a cock l . The pad is covered externally with soft fabric such as moleskin, and the rubber may be lined with a reinforcing fabric. A stuffing of horse-hair or other fibrous material may be used in addition to, or instead of, the inflation. The outer part a of the collar is composed of metal plates, having flanges for the hames and held together at the bottom by a bent telescopic tube c provided with eyes d for attachment of the hames. To prevent injury to the pad by friction, a plate of zinc or other metal, or a sheet of felt, may be interposed between the pad and the outer part. India-rubber tubing is inserted round the extreme outer edge of the collar, but within the pad itself; this causes a better bearing on the shoulder.

**350. Bray, G.** Feb. 4. [*Provisional protection only.*]

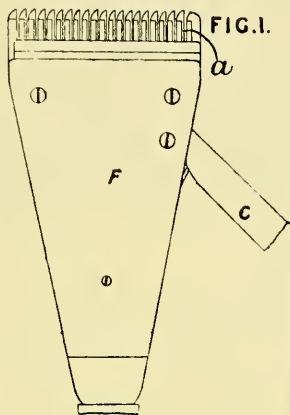
Fastening traces, slip-hooks for. Slip-hooks for attaching the traces and other parts of harness to carriages are constructed with the loop of the hook hinged, swivelled, or jointed so that one half will turn back sideways. One means of forming this hinge or joint is "to use a hinge pin having its axis "in the same plane with the hook." In case of accident, the hook can be readily released by turning one part on the other. The latch for the hooks is formed by fitting a pin on the point of the turning half at right-angles to the general line of that part. The pin enters a loop or eye formed

in the standing part of the hook when the turning half is closed. "A swivelling point" on the end of this pin is arranged so "that when the turning part of the hook is shut to, the point shall fall over and shut or latch it into the eye." Any known latch may be used.

369. Oford, J. S. Feb. 6.

Horse clippers.—

The hair is held between the teeth of two combs, while the cutter is moved obliquely over the teeth. Fig. 1 shows one of the combs *F*, the teeth of which are formed with projecting flanges *a* against which the teeth of the other comb plate, not shown, are brought to bear in order to hold the hair firmly. The movable comb plate is actuated by a lever *C*, and the cutter is actuated by a pin projecting from the same lever.



457. Taylor, W. H. Feb. 15. [*Provisional protection only.*]

Fastening breeching &c., buckle attachments for. Relates to a combined harness buckle and loop. A buckle frame, serving also as a loop and preferably made of malleable cast iron, is fitted at one end with a swivelling catch for securing a hinged side which is fitted to the other end of the frame. The hinged side carries one or more studs which act as tongues. Opposite each stud is a cross-bar having in it a hole which receives the stud when the buckle is closed. The frame is also provided with a cross-bar to hold the hame tug or strap, and may have loops for the breeching, back, and belly straps. An ornamental cover made by stamping a design in thin metal or made of cast metal is hinged or otherwise fastened to the buckle frame, and secured at the free end by the swivelling catch.

465. Winder, T. Feb. 16.

Fastening, spring attachments for. Relates to spring couplings for steering-chains &c. also stated to be applicable for carriages. The piston *d*, which works in the cylinder *a*, bears upon a rubber cylinder spring *g*, Fig. 1, or upon a multiple spring formed of rubber rings *v* separated by washers *w* as shown in Fig. 7. Both piston-rod and cylinders

have eyes, shackles, or the like for attachment. Fig. 7 shows a method of adjusting by the use of a screwed eye-rod *y*.

FIG. 1.

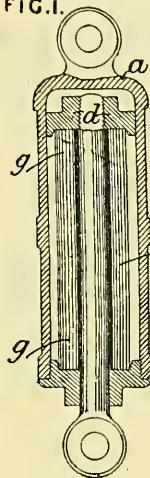
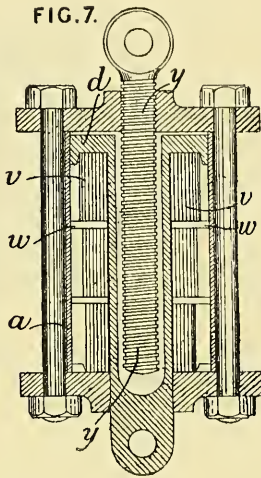
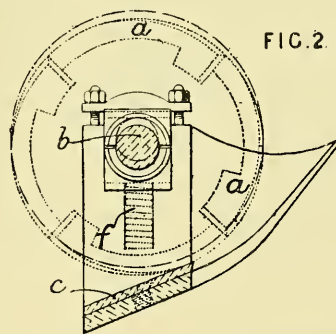


FIG. 7.



532. Morl, J. H. Feb. 20.

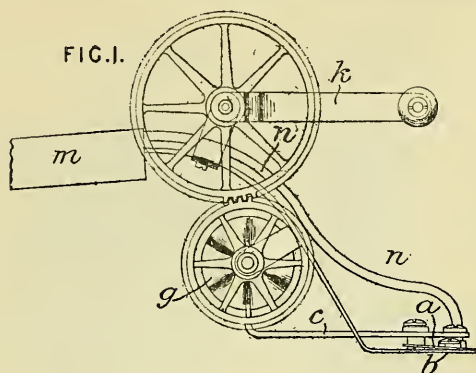


Horse clippers and the like.—Relates to rotary hair-cutting machines applicable also for clipping or shearing sheep and other animals. To prevent the hair from becoming clogged between the rotary helical cutters *a* and the fixed cutter plate *c*, the bearings of the cutter shaft *b* are arranged so that they can yield under the action of springs *f*, which may be fitted so as to be either in tension or compression; or the cutter plate *c* may be mounted on springs.

640. Clark, W. March 3.

Horse clippers and the like.—A toothed cutter plate *a* is caused to slide transversely over a comb plate *b* by a lever *c* the end of which is actuated by a zig-zag cam *g*, which may be rotated either directly by a winch handle or by toothed wheels operated by the handle *k*. To reduce the friction,

balls may be interposed between the cutter plate and comb. The handle *m* may be hollow to serve



as an oil reservoir, the oil being conveyed to the cutter plate by a tube *n*.

671. Knight, H. March 5. [*Provisional protection only.*]

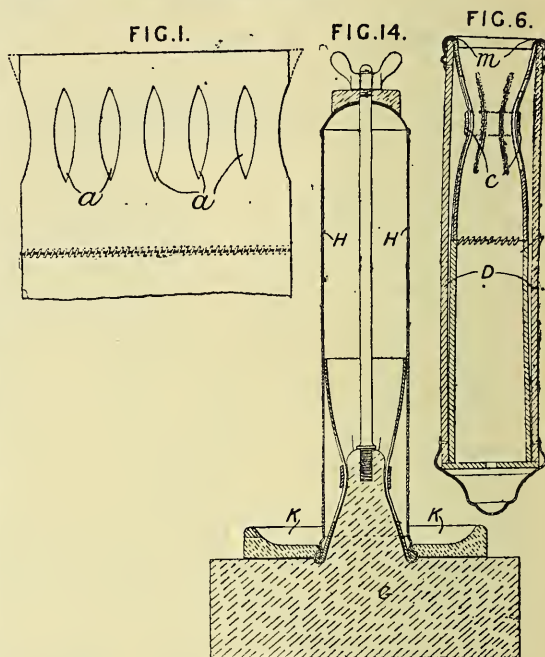
Horse clippers.—A toothed cutter plate is caused to oscillate over a comb plate, the teeth of both plates being similar, so that the action of each pair of teeth resembles that of a pair of shears. The oscillation of the cutter plate may be effected by a three-sided cam operated by a winch, or the oscillation may be produced by an archimedean screw or a mangle motion consisting of a right and left handed screw-thread cut on the same cylinder, and a guide on the cutter working in the thread. "The spaces between the teeth of the cutting plate are inclined backwards so as to permit of the ready escape of the hair."

731. Britten, B. March 10.

Whips.—The stocks or pliant stems of whips for riding or driving are made of light tubes of steel or other metal. The tubes may be drawn and brazed longitudinally in the ordinary way, and tempered or hardened; they may be tapered, and several of them of diminishing size may be soldered end to end, and they may be lacquered,

varnished, or electroplated. The handle is covered with leather, and whalebone or the like may be inserted in the smaller tubes.

748. Cooper, C. H. March 11.

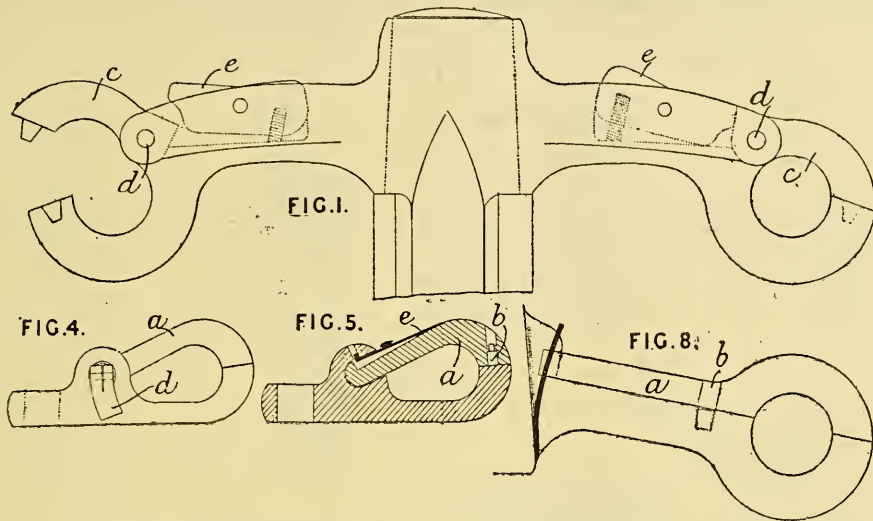


Whip-sockets.—In order to hold the whip firmly in the socket, the socket is lined with elastic material having a contracted part as at *c*, Fig. 6. Gussets *a*, Fig. 1, are cut out of a piece of leather, gutta-percha, or waterproof cloth, which is then formed into a tube on which is threaded a rubber ring *c*, Fig. 6. The tube is then fixed in the whip socket *D* by a metal ring *m*, or by internal and external metal rings. When the tube is made of gutta-percha, its edge may be moulded round the edge of the outer case or socket by placing the tube and socket on a mould *G*, Fig. 14, and pressing the softened edge of the tube round the edge of the socket by adjustable half-moulds *K*. After removal from the mould a metal mount is fixed on the top of the socket.

766. Bray, G. March 12.

Fastening.—The usual shackle connection between a carriage pole and the pole-chains is dispensed with. The pole-head *b*, Fig. 1, is fitted with rings the parts *c* of which are pivoted at *d* and interlock with the spring catches *e* when the ring is closed. Or the pole head may be fitted with hooks, shown in Figs. 4 and 5, having a swivelling part *a* pivoted at *b*. When the hook is closed, the swivelling part *a* is fastened by a spring catch *e*, Fig. 5, or by a drop-down catch *d*, Fig. 4, or by both of these. A modification is shown in Fig. 8, in which the swivelling part *a* of the hook is pivoted at *b*.

(For Figures see next page.)



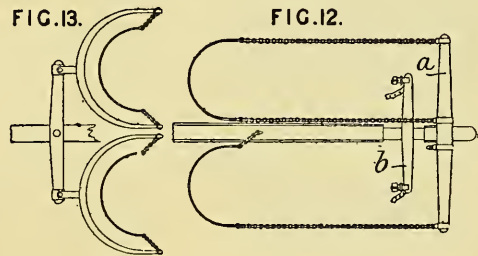
816. Starr, H., [Baldwin, A.]. March 17. [Provisional protection only.]

Fastening traces and straps, hooks for. A safety snap-hook for harness &c. is provided with a "spring guard or tongue" which opens inwardly. The guard is pivoted between jaws which form a recess in which the spring of the tongue is enclosed. The point of the hook is wedge-shaped, and fits a recess in the end of the guard. The hook is formed with a link or loop for attachment of a cord &c., and when the hook is intended for use as "a harness snap" it is provided with a broad link or loop to which the trace or strap is secured.

925. Hannart, L. March 27. [Provisional protection only.]

Muzzles for animals.—A muzzle for dogs and other quadrupeds consists of a head dress made partly of an elastic material and partly of a material elastic "transversely" only. A piece of steel extends from the end of the muzzle along the upper part of the animal's head; it is bent at the extremity of the nose and ends under the lower jaw, intersecting the front of the animal's snout in two equal parts. Two pieces of steel extend from the end of the head dress along each side of the head under the ears, "ending with two small balls placed in a line with the animal's teeth." Openings are left for the eyes and ears, and the upper and lower parts of the muzzle are bound together with very flexible steel springs. When the animal lowers his head, "the piece of steel is lifted up and is brought over the top of his forehead, thereby uncovering his mouth and enabling him to eat and drink."

1369. Perkins, T. May 4.

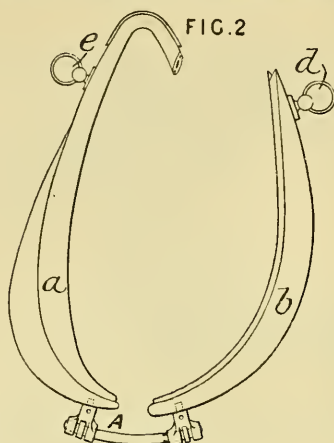


Breeching; yokes, neck.—To facilitate the backing of reaping and mowing machines, the breechings are connected by chains to a yoke *a*, Fig. 12, on the pole or at one end to the yoke and at the other end to the pole. The horses' collars are connected to rings on the pole or to a second yoke *b* capable of sliding a short distance on the pole. The whipple-trees may, instead, be curved and the breechings attached to them as shown in Fig. 13.

1411. Hunt, B., [Cogent, L.]. May 8. [Provisional protection only.]

Collars, neck; fastening.—The collar is made in two parts *a* and *b*, arranged so that they can be expanded laterally by a screwed connection *A* and lengthened in a vertical direction by a rack and pinion (not shown) operated by the rein ring *e*. The collar can thus be adjusted to fit any animal and, when closed, is locked by turning the rein ring *d*. A strap may be substituted for the locking and lengthening mechanism. The points of contact of the collar with the neck and shoulder are padded in the usual manner, "the

"vertebra being protected by a caoutchouc cushion
"maintained in position by an adjustable leather."



1592. Furness, W. May 24. *Drawings to Specification.*

Fastening, friction-gripping devices for. A clip or fastening for bands, harness, &c. consists of two metal jaws hinged together in any suitable manner and each provided with serrated teeth or other gripping-edges on its inner or biting edge. The opposite side of each jaw is curved or bevelled off to correspond with the belt or strap on which it is intended to bear. The two ends of the belt &c., passed below the under edges of the jaws, are carried upwards through the teeth. For wide straps the jaws may be provided with intermediate hinges

1655. Hancock, J. L. May 29. [*Provisional protection only.*]

Horse clippers and the like.—Teeth with cutting-edges are formed on one blade of a pair of shears, or attached to the blade by rivets or otherwise. The instrument is used for clipping horses, shearing sheep, &c.

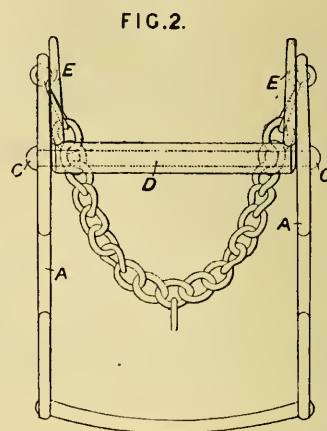
1752. Lake, W. R., [Sala, J.]. June 5. *Drawings to Specification.*

Bridles; whips.—To enable the rider to exert a push on the bit, the reins are stiffened by the insertion of a wooden or other core. By dividing the stock of a riding-whip longitudinally, the two lengths of stick so produced may be attached to ordinary reins by means of sliding rings, straps, &c., in order to stiffen them.

1760. Fenner, G. June 7.

Bits.—The head strap, instead of being connected to the cheeks A of a driving-bit, is attached

to the loops E, E, which are mounted on the tube D. The tube D fits loosely on the rod C, so that the head strap is not affected by the movements of



the cheeks of the bit. The loops E can be modified so as to be suitable for a riding-bit.

1803. Ardisson, A. A. June 11. [*Provisional protection only.*]

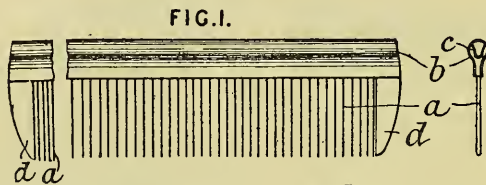
Stopping and controlling runaway and restive horses; bridles.—An appliance for blindfolding a runaway or unmanageable horse consists of an ornamental rosette at each side of the horse's head; it is made of caoutchouc or other supple material, hollowed in the middle, and is "mounted upon a" spring articulated to a metallic band fixed upon "the side strap of the bridle." The spring is held by a pin, from which it is released by pulling a cord or narrow rein, thus allowing the springs to carry the rosettes over the horse's eyes. For a horse in harness the blinder is within the blinker; it consists of "a spiral spring which acts upon an" elastic pad;" the spring is "restrained by a little" pin or bolt which is passed through the blinker" and is connected to a safety rein; when this rein is pulled, the springs are released and press the pads against the eyes of the horse.

1839. Halliwell, J., [Mackinnon, J. A., and Halliwell, A. B.]. June 15. [*Provisional protection only.*]

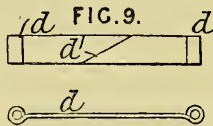
Fastening breeching, hooks for. A device for fastening the breeching to the shaft or thill of the vehicle, to enable the horse to hold back the carriage when descending a hill, consists of a hoop or clip having formed on it a hook with a hinged tongue. A yoke or loop takes into the hook and has "two short fingers or levers" so arranged that one will hold the tongue so as to close the hook when the horse is holding back, and the other will press the tongue back to open the hook when the loop is drawn forwards for the purpose of detaching it from the hook.

arranged to work with one working handle, in which case holes are made in the circular end of the other handle, which, engaging with a fixed pin, temporarily fix the handle in any required position. In either of the arrangements described above, the case or covering plate may be dispensed with. In the modification shown in Fig. 22, the cutting-plate *b* is centered at *c* and provided with a friction-roller *e*. The handles *f*, *g* are centered at *f*², *g*² and connected to the cutting-plate by levers *h*, *i*. The reciprocation of the handles causes the cutting-plate to oscillate across the face of the toothed plate *a*. A similar driving-arrangement may be adapted to the previously-described modifications. The Provisional Specification describes the reciprocation of the cutting-plate by means of a quick-threaded screw, a cam or cams, an eccentric, and bevel pinions.

2234. Hayward, J. July 22.



Combs.—In the manufacture of combs for horses and other animals, teeth *a*, Fig. 1, preferably made of steel wire of elliptical cross-section, are fitted into a rack (not shown), and their projecting ends are covered with solder. A steel strip *b* is bent into the form shown and a strengthening bent strip *c* is placed inside it. It is then placed over the projecting ends of the teeth and soldered to them. The rack is then removed and the end teeth *d* are soldered into the ends of the comb. The teeth are then sharpened by grinding. The end teeth are preferably made from a steel strip *d*, Fig. 9, which is bent at the ends and divided at *d*¹. The two teeth are then sharpened. The back of the comb may be made partly of steel and partly of ivory, wood, or other material. The metal parts of the comb may be made of aluminium bronze, or other metal or alloy. The combs are finished by japanning, electroplating, or browning &c.

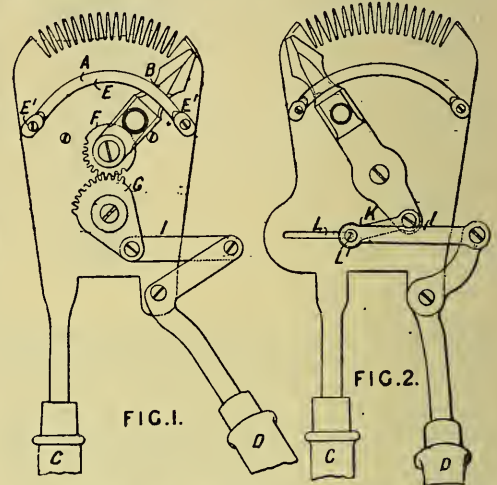


2251. Caldesi, L., [Angelini, A.]. July 24.
[Provisional protection only.]

Collars, neck; pads.—The roll of the collar is made and lined with straw in the usual way. An inner lining of india-rubber or gutta-percha tubes, placed longitudinally, is then put inside the roll, and the crevices and upper and lower parts of the collar are stuffed with horse-hair or woollen flocks. A serge or linen covering is placed over the lining. An old or ill-formed collar may be fitted with a

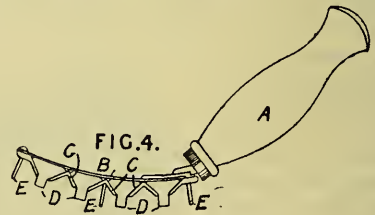
false collar by sewing india-rubber tubes to two pieces of canvas shaped to fit the sides of the collar. The canvas pieces are then secured inside the collar and covered with serge as in the previous case. The invention may be applied to all parts of the harness where pads are required.

2279. Lake, W. R., [Rawlings, E. H.]. July 27.



Horse clippers and the like.—A toothed plate or comb *A*, Fig. 1, is provided with a fixed handle *C*, for holding it, and a movable handle *D*, for working a knife *B* centered at *F*. The knife is rotated by means of the lever *I* and toothed segment *G*. A bridge *E* is fixed to the comb by adjustable screws *E*¹, and presses the knife against the comb. In the modification shown in Fig. 2, the knife is worked by the levers *I*, *K*, the connecting-pin *L* of which works in the slot *L*.

2325. Gedge, W. E., [Even, J. P.]. Aug. 3.



Currycombs.—The currycombs are provided with a wood or metal handle *A*, a plate *B* rounded at the angles, and metal "tubes" *C* in which are set strips *D* of caoutchouc, gutta-percha, or other flexible material. In some cases, metal blades or combs *E* may be inserted between the "tubes" holding the caoutchouc &c. strips. The "tubes" and strips may be set on the plate in any direction and position.

2611. Reade, W. H. Sept. 4. [*Provisional protection only.*]

Horse clippers and the like; brushing-apparatus for grooming; currycombs.—Clippers, having either revolving or scissor-like blades, are driven by clockwork actuated by springs. Currycombs and brushes for grooming animals may be similarly driven.

2791. More, J. W., and Norman, J. Sept. 25. [*Provisional protection only.*]

Horse clippers.—A comb plate, with a fixed handle, is fitted with guides in which a slide carrying a suitable cutter is capable of working freely to and fro. The slide is provided with a pin or projection, which enters a slot in one end of a lever working upon a centre of motion, and having a suitable handle formed on or fitted to its other end. At each end of the comb a suitable distance is left without teeth, so that, as the cutter comes to each end of its travel, it is free of the teeth. Dragging of the hair at those parts is thus prevented. The teeth of the comb are, by preference, comparatively fine and blunt at the end.

2925. Etienne, A. Oct. 8. [*Provisional protection only.*]

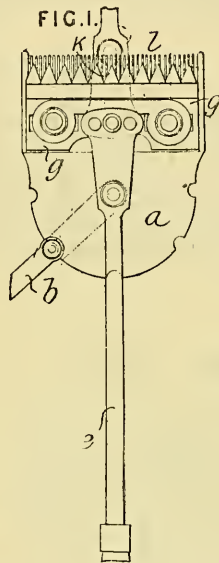
Runaway horses, releasing; fastening.—A horizontal rod fixed on the splinter-bar of a vehicle such as is described in Specification No. 1328, A.D. 1864, is attached to the "screw ring" and provided

with a pedal by means of which runaway or fallen horses can be released.

3076. Grayson, J. R. Oct. 22.

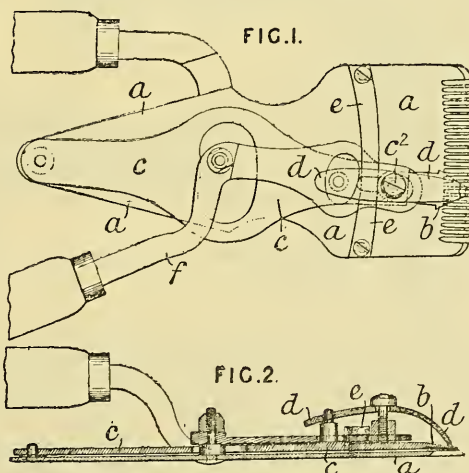
Horse clippers and the like.—The guiding-

handle *b* is pivoted to the comb plate *a* and can be clamped in various positions. The teeth *l* of the comb are parallel. The cutter *K* is movable, and is held by studs in a block *g* which slides on the comb plate, its traverse being guided by studs on the comb plate which pass through slots in the cutter and the sliding block. A stud on this block fits into one of several holes in the end of the second handle *e*, which is also pivoted on the comb plate. This arrangement allows the handle to be set at various angles, while always giving the required reciprocating movement to the cutter. By means of set-screws and a friction plate the pressure of the cutter on the comb is regulated. The cutter is similar to the triangular cutters used in mowing or reaping machines.



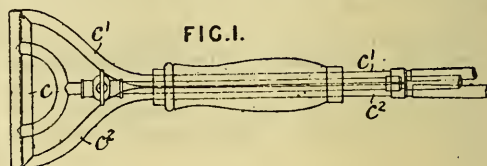
3126. More, J. W., and Norman, J. Oct. 28.

Horse clippers and the like.—The comb plate *a* is segmental in shape and to it an arm *c* is pivoted. The cutter *b* consists of a single tooth mounted loosely in the arm *c*, and is held down to its work by a spring *d*, adjusted by a screw *c*². The cutter is hollowed or channelled out between the cutting-edges, so as to facilitate sharpening and to enable the cutting-edges to be kept in close contact over their entire surface with the face of the comb. A bridle or guide *e* keeps the arm and cutter down. The cutter arm is operated by a separate handle *f* pivoted on the comb plate and having a slot in it engaging with a pin on the cutter arm, or directly by a handle fixed thereto. According to the Provisional Specification, the comb may be straight, and a to-and-fro motion may be imparted to the cutter.



3138. Taylor, T., and Davies, J. W. Oct. 29.

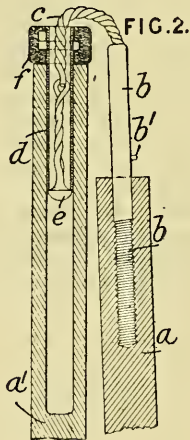
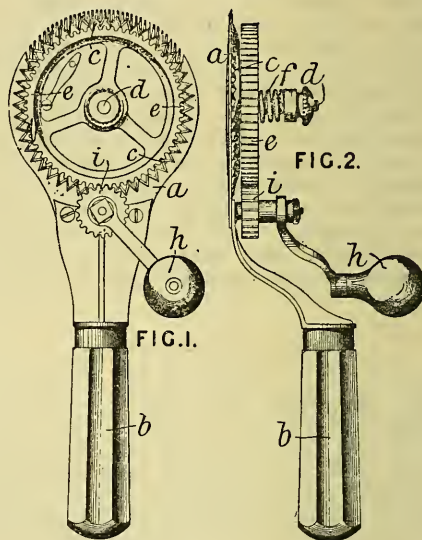
Singeing-apparatus.—A pipe through which a flow of water is kept up, is arranged close to the gas-jet pipe, so as to keep it cool and prevent it from scorching the horse. The water pipes c^1 , c^2 are led through the handle of the apparatus and are connected with the cross pipe c fitted close alongside the usual gas pipe which forms the burner.

**3221. Heath, S.** Nov. 9. [*Provisional protection only.*]

Horse clippers.—A circular comb plate is mounted on a handle. A revolving cutter with several cutting-points works over the comb plate; it is moved by a separate handle.

3230. Tracy, J., and Tracy, H. Nov. 10.

Whips.—The handles or sticks are made in two or more parts arranged to be partially separated and folded. The part a is provided with a stem b which fits into a socket d in the other part a^1 . A cord or chain c attached to the stem b passes through the socket d and is connected to a weight e which acts as a stop, preventing total separation of the two parts. The cord c may be connected to the socket by a spring. A stud b^1 projecting from the stem b enters a groove in the socket d , and the two parts a , a^1 are locked together by a grooved collar f after the manner of a bayonet joint.

**3296.****3356. Salom, S. H.** Nov. 20. [*Provisional protection only.*]

Horse clippers and the like.—The cutters are detachable and are mounted upon the cutter plate &c. in such a way that they are kept in contact with the comb plate by pressure on the cutter lever. The cutter is preferably a segment of a hollow sphere.

3296. Bonneville, H. A., [*Courtois, C.*]. Nov. 15.

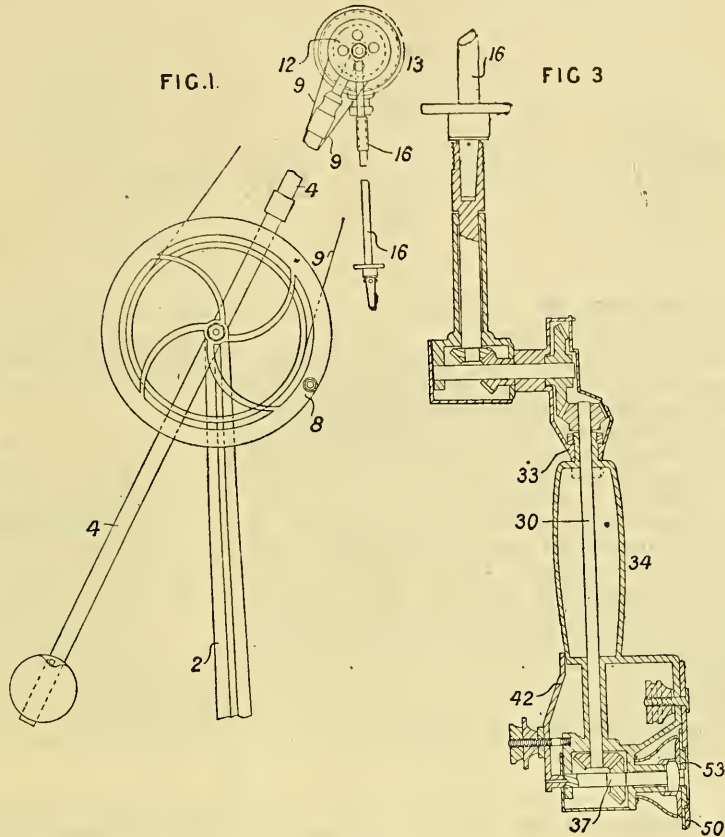
Horse clippers and the like.—A clipper for horses &c. comprises a disc a secured to a handle b and provided with parallel teeth in front, which lift up the hair so that, on the rotation of a plate c having angular teeth as shown, the hairs are severed. The plate c is pressed against the disc a by a spring f mounted on its axle d , and is rotated through toothed wheels e , i by means of a handle h .

(For Figures see next column.)

3476. Henderson, A. C., [*Piltner, T.*]. Dec. 1.

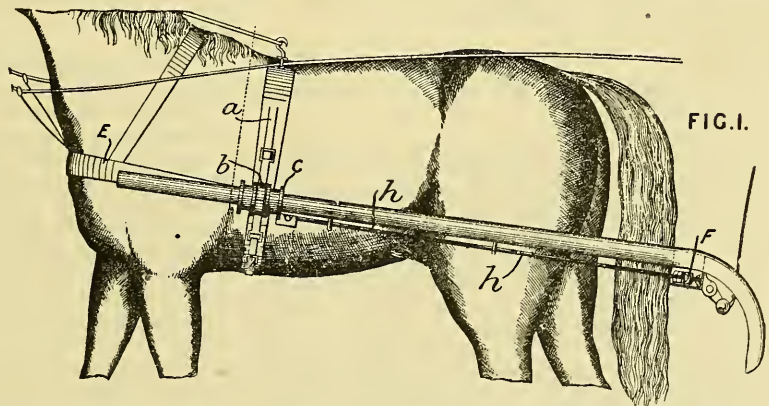
Horse clippers and the like.—A balanced lever 4 is pivoted on the top of a column 2, which is adjustable in a pedestal fixed to the ground. From the upper end of the lever is hung a swinging rod 16, which is rotated by bevel gearing 13 driven by a band 9 and grooved pulleys 8 and 12 operated by hand or power. The lower end of the rod 16 is connected to an arrangement of spindles, shown

in Fig. 3, geared together by bevel gearing, but capable of swinging in such a way as to form a universal joint. The spindle 30 is surrounded by a sleeve 34 which forms a handle, and at its lower end it drives the cutter spindle 37. On one end of this spindle is fixed a cutter consisting of a slightly-convex disc 53 with two projecting blades which work against a series of star-shaped blades or teeth on a fixed annular disc 50. The cutter discs 53 and 50 are pressed together by a spring 42 acting on the end of the cutter spindle. Guards are provided for preventing the cut hair from entering the casing of the cutters. The apparatus is rendered noiseless by forming the teeth of the bevel-wheels of wood or other suitable material or by employing friction gearing. Several of these machines may be arranged to be driven by power from a single shaft.



3518. Lake, W. R., [Waldhauer, D.]. Dec. 4.

Fastening; runaway horses, releasing. — The backband *a* is attached on each side to a clamp *b* consisting of a pair of pivoted jaws which embrace a sleeve *C* adapted to slide freely on the shaft or pole. At the front the sleeves are attached to the breast strap *E*, and at the rear to traces or draught rods *h*, the rear ends of which are formed with heads which engage with slotted openings in the ends of the single-tree *F*. The single-tree is secured to the vehicle by a catch of any suitable construction which can be released by pulling a cord in the event of the horse running away; the sleeves *C* will then slide off the ends of the shafts and the horse will be



released from the vehicle. The front ends of the traces are attached to the sleeves in such a way that they become detached when the sleeves leave the shafts.

A.D. 1870.

8. Lake, W. R., [*Crosby, J. B.*] Jan. 1.
[Provisional protection only.]

Fastening.—For harnessing animals to vehicles, traces and tug straps are dispensed with. The saddle strap, breast strap, breeching-strap, and the strap by which the shafts are prevented from swaying are all attached to loops on a metal piece in connection with a draw-bolt on each shaft. The draw-bolt is surrounded by a helical spring and enclosed in a case which can be adjusted on the shaft to suit the size of the animal. The draw-bolts are secured to the shafts by pins passing through eyes on their ends, and the animals can be quickly released by withdrawing the pins. Leather washers or cushions are interposed between the metallic parts to prevent rattling.

Saddles, girths for. The girth strap has its front edge in the form of a soft roll to prevent chafing of the horse.

175. Kilner, J. M. Jan. 20. *Drawings to Specification.*

Fastening.—"Grab-links" formed with pear-shaped or keyhole openings are stated, among other uses, to be applicable as substitutes for hooks for cart and harness gear.

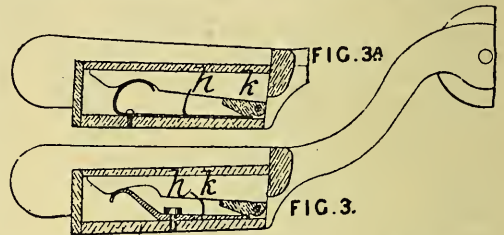
241. Currier, J. W. Jan. 27. [Provisional protection only.]

Fastening traces. A piece of metal with a curved or cam-formed end is fixed to the whipple-tree or other suitable part of the carriage, and to or near the piece a link is jointed, so that the outer or curved end of the piece and the inside of the link form a space adapted to receive the end of the trace. The pull on the trace draws the link over the curved end of the piece, thereby holding the trace firmly in the space between by pressure on the sides of the trace. There may be inside the link a projecting pin, a hole in the trace, and a slot in the curved end of the piece for the admission of the pin, or a spring may be applied to prevent loosening of the end of the trace.

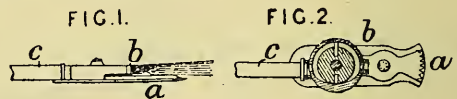
287. Latchford, B. Feb. 1.

Spur-carriers.—The door of the spur box, Fig. 3, is made to open inwards and downwards. A single spring *h* is substituted for the two hitherto

used; it is fixed to the bottom of the box by a rivet, and serves to hold the spur plug *k* and to close the door when the plug is pulled out. A modified form of spring is shown in Fig. 3. On



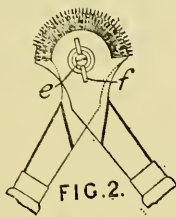
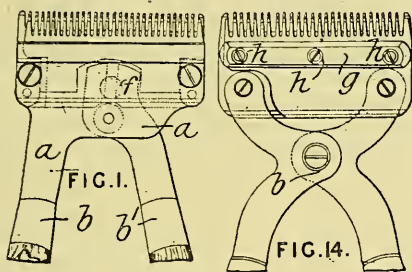
the top plate of the spur box are two, four, or more flanges, and, in building the heel, packing is placed between the flanges of each side, screws or pins being unnecessary.

394. Wilson, J. C. Feb. 10.

Horse clippers and the like.—The cutting-blades, Figs. 1 and 2, similar to those of a mowing-machine are carried by each of two plates, the lower being stationary and the other movable and operating transversely. The lower plate is provided with a guard, placed underneath, to protect the skin from the points of the blades. The movable plate derives its motion from a small rotary engine *b* affixed to the stationary plate and worked by means of air or other fluid. The exhaust pipe of the engine discharges over the cutting-teeth so as to clear away from them the hair which is being cut; or a fan may be used for this purpose. If the blades are to have a reciprocating motion, the cutter is connected to a small crank or eccentric on the spindle of the small engine; if they are to have a continuous motion, the cutter is fixed directly upon the spindle. The small engine *b* may be connected by a flexible pipe with a pump or motor such as described in Specification No. 3499, A.D. 1869, [*Abridgment Class Rotary engines &c.*].

427. Flear, J. Feb. 14.

Horse clippers and the like.—The apparatus consists of two superposed semicircular combs, both formed with cutting-edges. The combs are pivoted together by a pin *e*, which can be tightened by a thumb-nut *f*. To reduce friction, the combs are in contact with each other only at the pivot and cutting-edges. Handles on the combs enable them to be worked like shears.

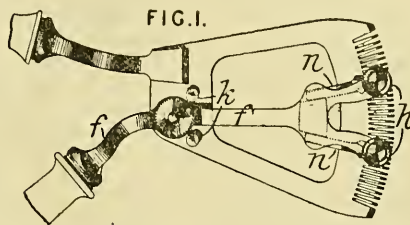
**458. Twigg, G.** Feb. 16.

Horse clippers and the like.—A clipper for horses and other animals, also applicable for cutting grass &c., is provided with two superposed shearing-plates with cutting-teeth to which a rectilinear reciprocating motion is given. In Fig. 1, one of the shearing-plates *a* is shown fixed to the handle *b*; the other is caused to reciprocate in guides by means of the pivoted handle *b'* the end of which is bifurcated, as shown in dotted lines, to engage with a stud *f* on the movable shearing-plate. In the modification shown in Fig. 14, the projecting end of each handle is pivoted to one of the shearing-plates, which are guided by plates *g*; the motion of the shearing-plate is limited by studs *h* working in slots in the plates. In another modification, the points of attachment of the handle levers to the shearing-plates are arranged between the pivot *b* and the handles. In another modification, the handles are pivoted together after the manner of a pair of scissors.

508. Smith, T. J., [Lengelée, A., Bouttier, L., and Vincent, C.] Feb. 21.

Horse clippers and the like.—The blade carrier *f* is provided underneath with grooves in which the blades *n* are placed. Screws *h*, which press the movable edges against the fixed plate, traverse the branches of the carrier. The movement of the carrier *f* is limited by the stops *k*.

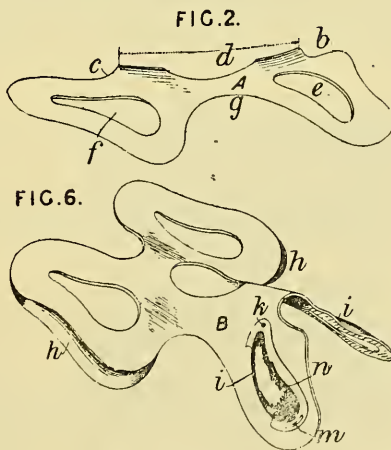
(For Figure see next column.)

508.**530. Rydill, G.** Feb. 23.

Stuffing-materials.—Flock, mill waste, &c. is purified, dyed yellow, washed, and dried in a stove by means of hot air, after which it is ready for use as flock for saddlery &c.

760. Stockbridge, C. March 15.

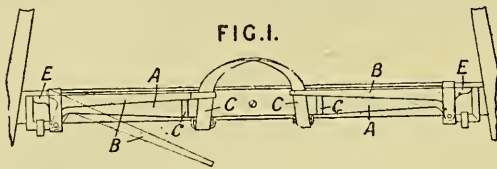
Collars, neck; saddles; lining; materials.—Collars and saddles are lined or stuffed with spongy india-rubber such as is described in Specification No. 3215, A.D. 1868, [Abridgment Class India-rubber &c.]. The spongy material, when used as a lining, may be attached to leather; it is placed next the coat or skin of the animal.

980. Johnson, W. April 4.

Saddles.—The saddletree consists of two superposed metal plates. The lower plate, shown at A in Fig. 2, is shaped to fit the horse, the front, the middle, and back portions of the arch being cut away as shown at *b*, *d*, *c*, and parts of the sides being also cut away as shown at *e*, *g*, *f*. The upper plate, shown at B in Fig. 6, is similarly shaped except that the edges at *h* are bent inwards to form flanges, the edges of which bear on the lower plate. The two plates are secured together by any suitable elastic cementitious material, a sheet of

canvas or other material being interposed between them. Embossed pieces *i*, constituting the fork rests, are formed on the outer plate or attached thereto by pivot pins *k* and adjustable pins *m*, by means of which the inclination of the rests can be adjusted to suit the rider. Slots *n* are made in the embossed fork rests for the passage of straps to secure the cloak of the rider. The stirrup straps are suspended from the pins *k*. When the saddle is intended for draught purposes or for use as a pack-saddle, a third plate may be interposed between the other two; it is provided with projecting pieces slotted for the attachment of straps, pockets, &c.

1074. Lake, W. R., [Jones, E. P.]. April 12.



Fastening; runaway horses, releasing.—On each end of the whipple-tree *A* is pivoted a lever *B*, the end of which, shown at *E*, forms the fastening for the trace. The levers are held in position, when the traces are fastened, by stops *c* on the whipple-tree. The driver, by lifting the inner ends of the levers by means of a strap *C*, causes them to clear the stops *c*, and the pull on the traces then causes the levers to move into the position shown by dotted lines, so that the traces will become detached.

1596. Holder, T. June 2. [Provisional protection only.]

Horse-boots.—An elastic covering for the hoof, to protect it from the effect of sandcracks &c., consists of an endless band of india-rubber shaped to fit the hoof.

1609. Henry, M., [Camalez, M.]. June 3. [Provisional protection only.]

Bits.—The mouthpiece of the bit has a rising or projecting part towards the centre, and a curved or bent part, which, when in action, presses against the horse's palate. The curb chain is connected to the ends of the curved part, passing under the lower jaw. The reins are inserted through rings placed at intervals on the side bars, so as to regulate the tension of the bit.

1618. Kenney, C. June 4. [Provisional protection only.]

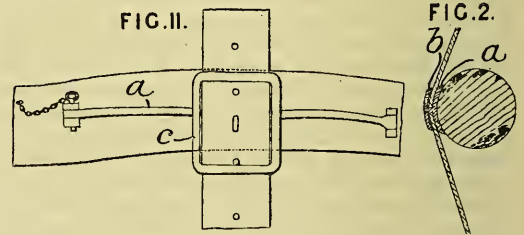
Mounting and dismounting, appliances for facilitating.—An appliance or "step" to facilitate

mounting a horse &c. is pivoted to a band of steel &c. which surrounds the boot heel and is secured in position by a strap under the foot and across the instep. The "step" is adjusted to its positions by springs, and is so formed that, when it is required for mounting, "it descends beneath the sole of the "foot perpendicularly," forming a pedestal whereon the wearer can raise himself "upon one leg the "required height;" when not required, it turns round the heel of the boot "along by the calf "of the leg out of the way of everything." The step adjusts itself to every position of the foot and leg and "it is adjusted to either position by a "single movement of the foot."

1692. Granham, F. W., and Butterfield, B. June 13. [Provisional protection only.]

Muzzles for animals.—Dogs' muzzles are constructed so as to allow the animal to lap water. Two wires are bent to the form of the head and provided at each end with an eye through which a strap is passed, also being passed round the neck of the dog; one wire, extending from the back of the head, terminates under the lower jaw; a second wire extends from below the ears, across the line of the mouth, and, crossing the nose, is fastened to the neck strap; a third wire is passed round or enclosed within the above-mentioned two wires at a point near the end of the jaws, leaving sufficient room for the mouth to open freely. The wires are secured to each other, and their elasticity causes the muzzle to fit close to the head of the animal.

1874. McHardy, R. July 2.



Fastening back and belly bands. The shafts of carriages, gigs, and other vehicles are supported from the backband by fitting to each shaft a plate *a*, Fig. 2, having a stud or studs to fit into holes in the backband. The points of the studs are covered by a hinge plate *b* or by a strap. The studs may be hinged to the plate *a*. The plates may be adjustable in grooves on the shaft; or, instead of the plate *a*, a tube may be fitted round the shaft having a stud projecting from it at one side; or the studs may be simply screwed into the shaft. In another arrangement, shown in Fig. 11, the backband is fastened by a buckle *c*, which can slide on a hinged arm *a* on the shaft. The Provisional Specification states that adjustable loops for the

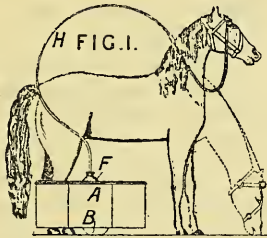
shafts may be formed on the bellyband, the ends of which are attached to buckles on the ends of the backband; or the buckles may be formed with clasps or clips to embrace the shafts and serve as the loops.

1902. Hoffman, J. W., and Harrison, F. A. July 5. [*Provisional protection only.*]

Ornaments for unspecified articles.—Relates to the attachment of heads or blanks of china, porcelain, glass, or the like to metal, in the manufacture of harness mounts and other ornamental articles. The rough backs of the heads are covered with a flux consisting of powdered silica, lead oxide, and either potash or borax, mixed with a volatile oil or water. After the flux has been dried and burnt on, a second backing of lead or other metal is applied, and the shank, nail, or the like is soldered thereto. Two heads or blanks may be similarly soldered together. By this process the grinding, cutting, and polishing of the back are avoided.

2388. Haseltine, G., [*Upson, J. W.*]. Sept. 1.

Tethering animals.—The horse or other animal is hitched to a spring sweep H, the lower end of which is attached by a universal joint to a counterweighted sphere F which tends to keep the sweep in the elevated position but allows it to yield when the animal is feeding. The sweep is mounted on a case A fitted internally with rollers which can be lowered as shown at B to enable the tether to be moved, or can be raised and folded to one side when the tether is to be stationary. In a modification, the weighted sphere is mounted in a cylindrical frame fitted with hook-shaped stays by which it can be anchored to the ground.

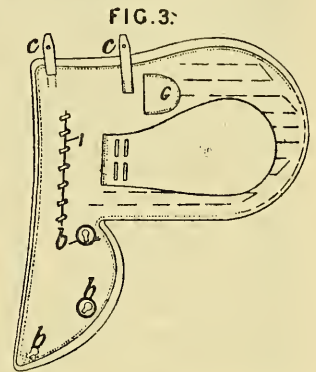


2477. Newton, W. E., [*Dallon, J. E.*]. Sept. 14. [*Provisional protection only.*]

Fastening harness. A fastening, applicable for harness &c., is formed of a bar, carrying a bent tongue on its inner side or face and hinged to a plate or strap attached to one side or edge of the article to be fastened, and a perforated plate or strap attached to the other side or edge. To close the fastening, the bent tongue is passed through the perforated plate by shutting down or closing the hinged bar, when a perfect lock of the plates is effected.

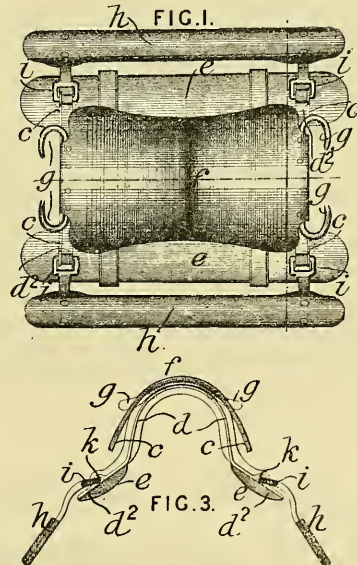
2531. Harvey, W. Sept. 21.

Saddles.—Riding-saddles, especially hunting and side saddles, are provided with removable panels which can be readily re-stuffed. The tree is made quite level "by filling between the iron straps, flaps, and other parts, and then covering them with leather" to make a smooth surface for the panel. The webs



also are covered with leather. The panel is made in halves, and is fitted to the saddles so as to allow a free current of air to pass from front to back thereof. Fig. 3 shows an inside view of one of the panels. Plates *b* are sewn to the panels, and in each plate is a keyhole slot which fits on to a stud on the tree for securing the panel to the tree so that it can be easily removed. The panel is further secured by straps *c* attached to studs fixed to the front of the saddle, and by a pocket *G* into which the fork of the saddle fits. In each half of the panel is a slit *I*, which is sewn up and can be opened for re-stuffing. The top of the panel is lined with canvas to prevent the leather from stretching. The bearings of the panels may be made of two layers of felt with india-rubber between them.

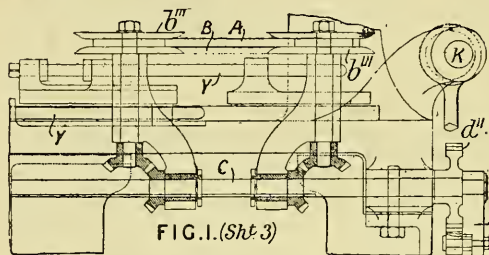
2614. Moody, J. Oct. 1.



Saddles, particularly applicable for pack or military purposes. Figs. 1 and 3 show the application of the invention to a pack or military saddle.

The pommel and cantle of the saddle are made of iron or steel bow-shaped bars *c*, *d* of T-section. The flanges *d* are horizontal and the riding-seat *f* is riveted to these flanges. If the saddle is to be furnished with baggage hooks, these hooks *g* are also riveted to the flanges *d*. The lower straight ends *d*² of the bars *c*, *d* are riveted to the wooden tree *e* to which the saddle pads are connected. Wooden side bars *h* are jointed by the hooked parts *i*, riveted to the side bars, engaging eyes or loops *k* on the ends of the bars *c*, *d*. These jointed side bars permit the saddle to be used for animals of different sizes. In constructing a frame saddle, the straight lower ends *d*² of the bars *c*, *d* are prolonged and the saddle is fitted for carrying guns, litters, and ammunition boxes. In a modification, the bars *c*, *d* are constructed of angle-iron in place of the T-section bars, and the straight ends *d*² may be formed from the flange alone.

2698. White, T. Oct. 12.



Riveting-machines.—A part of the invention relates to a machine for joining lengths of leather by nailing or riveting for making harness &c. Fig. 1 (Sheet 3) shows an elevation of a part of the machine. The leather strap *A* passes between two flanged feed-rollers *b*¹¹¹, which may be formed with teeth or covered with india-rubber. These rollers are driven by bevel gearing from a shaft *C* rotated by ratchet gearing *d*¹¹ at its end, operated by an eccentric &c. on the main driving-shaft *K*. Another eccentric on this shaft operates, by means of a connecting-rod, an overhead lever which works vertical slides with tools or appliances for cutting off wire to form rivets or nails and driving them into the leather as described in Specification No. 368, A.D. 1864. The leather strap, after passing the feed-roller *b*¹¹¹, passes over a supporting-bar *B* and between two guide-rollers of similar form but free to rotate. The positions of the feed and guide rollers can be adjusted by screws *Y*. The scrap pieces of wire may be blown away by an air pump or bellows.

2706. Huckvale, T. Oct. 13. [*Provisional protection only.*]

Bridles; bits; rein-holders.—The curb and snaffle reins are attached to a handle which has a crosshead at each end. The two reins are buckled or otherwise fastened to the extremities of the crossheads, and, by turning the handle partly round,

the pull may be thrown either upon the curb or snaffle rein. A similar handle, but without the crossheads, may be used with a single rein. Instead of a curb bit, a stiff bridge-piece of metal passes over the horse's nose and is jointed on each side to the side bars. A strap, passing under the jaw, connects the upper ends of the side bars, and the rein is connected to their lower ends nearer to or farther from the joints of the bridge-piece, as more or less power is required.

Fastening reins. To connect rapidly the ends of broken reins, the ends are passed through a metal loop, and the pointed end of a screw is passed through the ends into a tapped hole in the loop.

2743. Newton, W.E., [Spencer, R.]. Oct. 18.

Saddle cloths are made of felt of a graduated thickness, the part forming the pad being made thick by the introduction, during the manufacture of the fabric, of an additional quantity of cattle hair, shoddy, or other cheap material between the bats of felt forming the surfaces. The flaps &c. are made thinner than usual. The felt may be manufactured in the manner described in Specification No 3404, A.D. 1870.

2780. Whale, D. Oct. 21. [*Provisional protection only.*]

Fastening pole chains, straps, and other parts in connection with harness. The fastening is more especially intended for disconnecting the pole chain or strap from the collar of a fallen horse. It is made of iron &c. in six different portions. The upper part of the fastening is in the form of a common chain link open at the bottom, forming two ends or lugs having holes for a rivet. Between these lugs are the lugs of two depending jaws, which are attached by a rivet to the link portion, forming a hinge-like joint. The jaws are held together by a ring, which is kept in position by a spring located between the jaws. A strong pin, attached to the lower part of one of the jaws, acts as a catch or hold for the attaching of a chain or strap. By pressing the jaws together, the ring slips up, the jaws open, and the chain or strap is released.

3051. Lee, F. Nov. 22. [*Provisional protection only.*]

Fastening traces. For attaching the traces of artillery and other harness to the breast collar in such a manner that they can be disconnected by the rider when in the saddle, a hook formed in one piece with a ring on the breast collar engages with an eye or link on the trace. A loop is attached to the harness near the hook, and the trace is passed through it to prevent the trace from being jerked off the hook. For "leader" harness the hooks are made single; in other cases the ring is formed with two similar hooks placed in opposite positions, one for attaching the trace connected to the vehicle, the other for the trace of the leading horse.

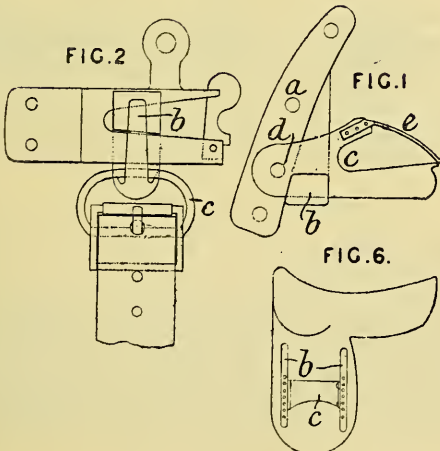
3404. Newton, W. E., [*Spencer, R.*]. Dec. 31.
[*Provisional protection only.*]

Saddle cloths.—Felted fabrics for saddle cloths and other articles are made with some parts thicker than others by the use of rollers which are hollowed out at the parts corresponding to those where an increased thickness is required, so as to admit of an additional quantity of fibre being worked up at those parts. The additional fibre may be of the

same material as the body of the cloth, or a coarser or commoner material such as hair, coco-nut fibre, coarse wool, &c., which will be enclosed in the finer material, may be used. For saddle cloths, the fabric may be made to diminish gradually in thickness towards the edges. In some cases, a woven, knitted, or other openwork fabric may be combined with the felting-materials, as a foundation. The fabrics may be ornamented, on one or both surfaces, by printing or embossing in colours.

A.D. 1871.

82. Huckvale, T. Jan. 12



Stirrup straps, suspending, safety saddle-bars for. Several forms of saddle-bars are described which will allow of the disengagement of the stirrup leather in the event of the rider being thrown. In the form shown in Fig. 1, the saddle-bar *c* is pivoted at *d* to a metal piece *a* fixed to the saddle-tree and is supported by a stop *b*. If the rider is

thrown, the pull on the stirrup leather causes the bar *c* to turn upwards on its pivot so that the stirrup strap can slip off the bar by raising a spring *e*. In the form shown in Fig. 2, the stirrup strap is hung from a ring *c* which is supported on a hook *b* on a connecting-piece fitted on the saddle-bar. In another arrangement, the stirrup strap is formed with holes to fit on a hook similar to *b*; or a stud on the stirrup strap may work in a slot in the connecting-piece or in a curved groove in the saddle-bar itself, in such a manner as to become disconnected if the rider falls on either side.

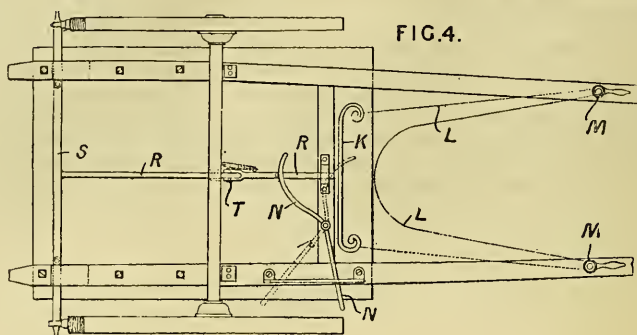
Saddles; pads.—To enable the rider to obtain a firm seat, the saddle is fitted with a movable pad *c*, Fig. 6; this is attached to leather strips *b* in such a way that its position can be readily adjusted. A corresponding pad may be worn by the rider on his boots, leggings, or trousers.

214. Boehringer, J. G., and Krall, C.
Jan. 27. *Drawings to Specification.*

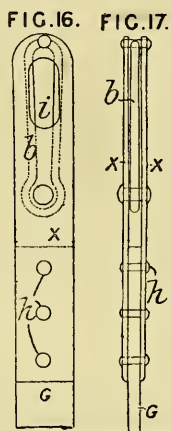
Runaway horses, releasing; fastening.—The Provisional Specification states that, in the event of a horse shying, the driver, by a pull or pressure, can "release the traces by lifting the bolts which fasten "the hooks to the splinter bar."

405. Unwin, W. Feb. 16.

Breeching.—For applying the brakes of a cart automatically when the horse presses backwards, the breeching L passes round rollers M and is attached at its ends to a cross-bar K which actuates a sliding-rod R attached to the brake beam S. When the horse presses backwards, the rod R is drawn forwards and applies the brakes.

**438. Minns, H. R.** Feb. 18.

Fastening traces to splinter-bars. Two plates X with holes i are riveted at h to the trace G and enclose a spring b, which embraces a stud on the splinter-bar when the holes i are passed over it.

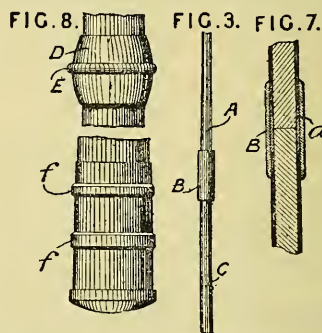
**841. Gossip, G. H.** March 29. [Provisional protection only.]

Bridles; breeching; saddles; fastening.—Bearing-reins and cruppers have elasticity given to them by the insertion, in any convenient part or parts, of pieces of india-rubber (vulcanized or not) or other elastic material. Or elastic pieces may be connected to the pad or saddle to which the bearing-rein and crupper are attached.

985. Hughes, E. T., [Shelton, C. T.]. April 13.

Whips.—The upper part A, Fig. 3, of a driving-whip, which is liable to be frequently broken, is made separate from the lower part C, so that it can be readily renewed. The lower ends of the part A has attached to it a socket B which screws on to the part C. In the case of braided whips, the upper part may be jointed to the lower part as shown in Fig. 7. The braided covering is removed for a short distance from the ends of both parts, to admit a ferrule d, and the joint is completed by a tube B. The braiding is rendered waterproof by

coating it with a mixture of solution of india-rubber, gum shellac dissolved in alcohol, and "chloride of ether." The portion of the stock which comes into contact with the whip socket is



protected by fixing on it a band D, Fig. 8, having a raised bead E on it. The butt mounting consists of a thick metal cap solid at the base, and turned into the desired form with ribs f left projecting around the surface. The parts of the surface between the ribs can be ornamented, the ribs protecting them from injury by rubbing on the socket.

1197. Wallen, T. May 3. [Provisional protection only.]

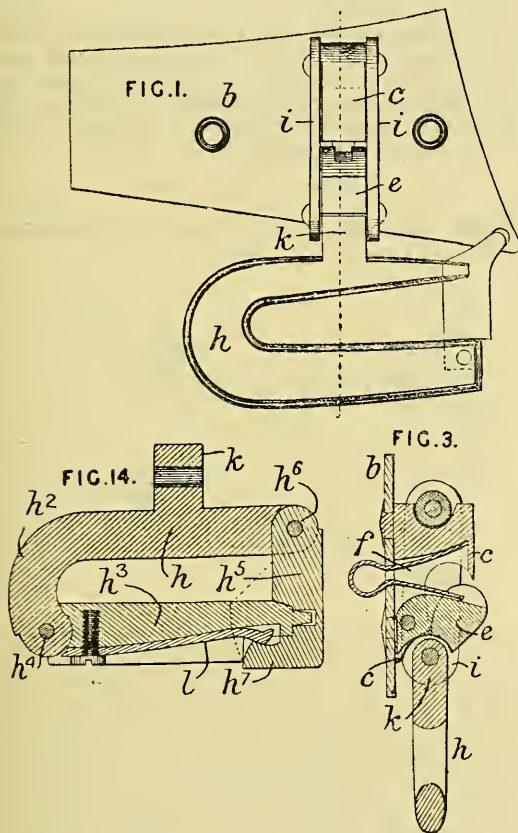
Horse clippers and the like.—The lower set of teeth is fixed to a plate fitted with a handle for guiding the clipper over the surface to be sheared. The upper teeth are reciprocated by the action of a grooved cam mounted on the guiding-plate and rotated by a handle at the side of the apparatus.

1264. Holland, W. May 10. [Provisional protection only.]

Horse clippers and the like.—The comb plate with the lower set of teeth, is provided with a guiding-handle; the cutter plate, with the upper

set of teeth, is caused to slide transversely by means of rack teeth formed at its rear edge engaging with a toothed segment which is operated by a hand-lever. The cutter plate slides on a dovetailed guide fixed across the comb plate. The two plates are pressed together by a spring, secured in position by a bolt passing through the two plates and through the dovetailed guide and working in a slot in the cutter plate.

1360. Garnett, W. May 20.



Stirrup straps, suspending, safety saddle-bars for. The saddle-bar of a saddle is so arranged that the stirrup strap is liberated when a rider falls or is thrown. Figs. 1 and 3 show an ordinary saddle-bar provided with safety apparatus. A plate *b* is secured to the side of the saddle-tree and carries a hook-like support *c* with a depression upon its upper side. A movable piece *e*, having a depression upon its lower side, is pivoted to the support *c* and is pressed downwards by a spring *f*. The saddle-bar *h* is pivoted to a loop *i* by means of a knuckle *k*. The head or cross-bar of the loop is adapted to engage the depression in the support *c*, and the top of the knuckle *k* is adapted to engage the depression in the pivoted piece *e*. In connecting the loop to the support,

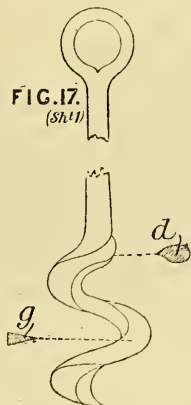
the head of the loop is first engaged with the support, and the saddle-bar *h* is held horizontally and pushed against the piece *e*, which is lifted so as to allow the knuckle *k* to pass. By turning the saddle-bar to the vertical position, the depression in the piece *e* engages the knuckle *k* and secures the link in position. If the rider is thrown, the foot which remains in the stirrup is raised, so that the saddle-bar is brought to a horizontal position, when the knuckle *k* lifts the piece *e* so as to allow the link, and consequently the stirrup, to become disengaged from the saddle. Should the foot of the rider be engaged in the stirrup upon the side on which he falls, the stirrup strap slips from the bar *h* by the opening of the jointed end thereof. In a modification, the pivoted piece *e* is omitted, and the knuckle *k* is made to engage the bottom of the support *c*. The saddle-bar may be constructed as shown in Fig. 14, in order to facilitate the escape of the stirrup strap by motion parallel to the flap of the saddle. The upper part *h*² of the bar, carrying the knuckle *k*, and the front end *h*³ of the bar are made in one piece. The lower part *h*³ is pivoted at *h*⁴ to the end *h*² and the rear end *h*⁵ is pivoted at *h*⁶ to the upper part *h*. The rear end *h*⁵ has a hooked termination *h*⁷ which engages with the free end of the lower part *h*⁶, a strong spring *l* on the part *h*³ engaging the hooked termination *h*⁷, so as to secure the jointed parts together. When the stirrup strap is engaged with the bar, pressure in a vertical direction has no tendency to open the bar, but, when the pressure on the stirrup strap is oblique, the strap is forced to the rear of the bar and acts upon the rear end *h*⁵ so as to open the bar and release the strap. This saddle-bar is preferably used in combination with the safety apparatus described by reference to Figs. 1 and 3, but the two devices may be used independently.

1367. Turner, G. May 22.

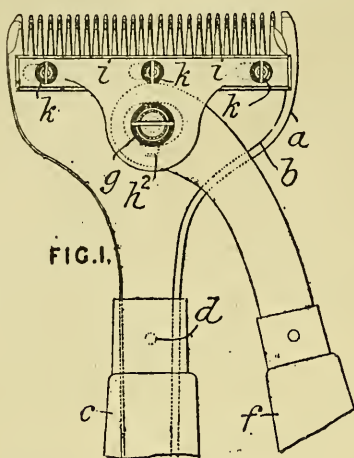
Clothing for animals.
—Cloths for horses are rendered waterproof by a mixture consisting of paint, soft soap, and boiling water.

Tethering animals.—

The screw peg shown in Fig. 17, which is primarily described in connection with tents, is stated to be applicable for tethering animals. The screwed portion is flattened as shown at *d*, *g*. The peg is formed with an eye so that a single animal may be separately tethered, or a wire rope, chain, or the like may be threaded through a number of eyes, and the animals tethered to it. This construction of screw peg is an improvement on that described in Specification No. 823, A.D. 1855.



1424. Price, E., and Thomas, C. May 27.



Horse clippers and the like.—The fixed cutter plate *a* and the movable cutter plate *b* are both formed with a long stem inserted in the handle *c*. The stem of the fixed plate is fastened by a pin *d* at the top of the handle, and the stem of the movable plate can oscillate on a pin near the bottom of the handle. The two plates are held together by a guide-plate *i* with screw pins *k*, which pass through slots in the movable plate and are screwed into the fixed plate. The movable plate is oscillated by a lever *f* working on a screw *g* screwed into the fixed plate and passing through a slot in the movable plate. The lever is formed with a tooth *h* engaging a notch in the movable plate, so that the teeth of the movable plate are moved over those of the fixed plate in the same direction as that in which the handle of the lever is moved.

1927. Rogers, S. July 22. [Provisional protection only.]

Stopping runaway and restive horses.—The traces are attached to "tumbler levers," which are also connected by chains to the brake levers. While the vehicle is travelling, the tumbler levers are locked by bolts, which can be withdrawn by hand or foot levers so that the brakes will be applied by the pull on the traces. When the vehicle is left unattended, the bolts are withdrawn, so that the brakes will be applied if the horse attempts to start or bolt.

1947. Brewer, E. G., [Edard, G., and Bazault, J. E.]. July 25. Drawings to Specification.

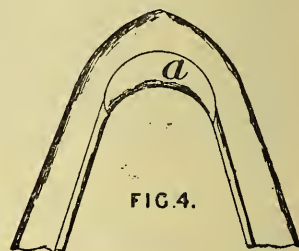
Clothing for animals.—Oxide of iron or other magnetic mineral is sewn into a quilted belt to be worn by an animal, with the object of preventing sea-sickness.

2321. Curtis, D. Sept. 2.

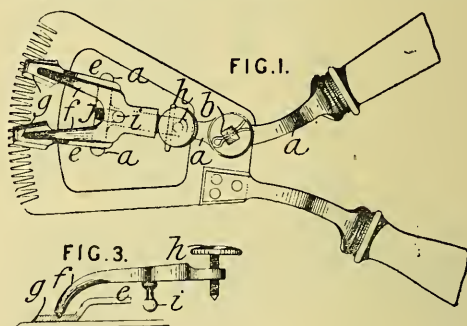
Collars, neck; saddles; lining.—

The parts of saddles, collars, &c. which are in contact with the skin of the animal are lined with zinc or its alloys, this metal being known to have a healing and hardening effect on the skin.

Fig. 4 shows a collar with a zinc pad *a* at the top. The zinc lining may be extended all round the inner surface of the collar. The pad may also be applied to collars which are open at the top. A collar may be made in three parts, the upper part being of wood lined with zinc.



2363. Smith, T. J., [Lengelée, A., Bouttier, L., and Vincent, C.]. Sept. 7.



Horse clippers and the like.—Clips or shears such as are described in Specification No. 508, A.D. 1870, for clipping horses and other animals and also applicable to other purposes, are arranged so that the blades are kept closely in contact with the toothed sector of the appliance. The blade carrier *a*, pivoted at *b*, has at its front end a cross-bar *j* formed with grooves for receiving the stems *e* of the blades *g*. The blades are pressed into contact with the sector by means of a forked piece, the two arms *f* of which bear downwards at their front ends upon the blades *g* while the head of the fork is fitted with an adjusting-screw *h*. The forked piece is centered upon a ball pivot *i*. By means of the screw *h*, the pressure may be adjusted. Instead of this pressure arrangement, two independent levers may be attached to a common cross-piece, through which passes a screw, adapted to bear upon the blade carrier.

2464. Drew, T. H. Sept. 19. [Provisional protection only.]

Horse clippers and the like.—A sector-shaped plate with teeth has formed on its rear end a stem for a handle by which it can be guided over the

animal to be clipped, the hair being cut by revolving cutters mounted on a stud on the plate and driven by toothed wheels operated by a handle. Or the cutter may be caused to reciprocate by means of a hand-lever, slotted at its end to engage with a stud on the cutter plate.

2499. Tergolina, Vincenzo, Count di. Sept. 22. [*Provisional protection only.*]

Bits.—Near each end of the part which goes inside the mouth there is a ring "moving on a swivel" and fixed to a flat plate which goes outside the horse's mouth. On the outside of each plate, and projecting from it at right-angles, is a ring to which the rein is fastened. If a curb is used, the plates may be prolonged downwards on to the lever of the curb. The plate may be rounded outwards on that part of its circumference which is nearest to the rider or driver. To add to the power of the bit, the projection from the plate of the ring to which the rein is attached may be increased.

2610. Serre, A., [*Chagnaud, P.*]. Oct. 3. [*Provisional protection only.*]

Stopping and controlling runaway and restive horses; bits; bridles.—The bit is provided with "an extra bar extending across from one 'cheek' to the other." This bar carries two rollers. A strap passing over each roller is secured at its lower end to the bellyband; the other ends of the straps pass one on each side of the neck and are connected so as to form a safety rein. By using this rein, the horse's head will be pulled down to its chest, complete control being thus obtained over the animal.

2711. Johnson, J. H., [*Closson, J. B. M. P.*]. Oct. 13. [*Provisional protection only.*]

Horse clippers and the like.—A circular knife or saw is caused to rotate over a comb by means of compressed air; it is driven by a small rotary engine of any simple construction, acting either directly or through gearing. The engine is supplied with compressed air from a reservoir by a flexible pipe. The engine may be in the form of a small helical or volute tube, through which the compressed air issues so as to impart a rotary motion and at the same time to blow away the hair to prevent the cutter from clogging.

2914. Stevenson, J. L. Oct. 31. [*Provisional protection only.*]

Tethering animals.—A picket pin for securing horses and for other purposes consists of three main parts or blades connected by a bolt or pin. The central part is straight and of such form that it will enter the earth easily. The other two parts are curved in opposite directions, so that,

during the act of driving the pin, the pressure of the earth against the convex sides of the blades causes them to radiate from the central part. The curved blades, when expanded, are secured in position by a ring, which falls or can be slipped over the ends of the curved blades projecting above the bolt on which they turn. Other fastenings may be employed in place of the ring, and, instead of two expanding blades, three or more such blades may be provided. The expanding blades may be provided with flukes similar to those of an anchor, or they may be made straight.

3106. Hall, J. Nov. 16. [*Provisional protection only.*]

Fastening, buckle attachments for. Relates to a buckle or fastener for harness, and other straps, chains, &c., also applicable to the harnessing of horses to shafts and poles of vehicles. A metal plate is provided with two ends or sides at right-angles to the plate. The top end of one side contains a spring catch, and the other side is hinged to a lid or clasp which shuts down and fastens into the catch. Midway between the ends, a steel pin turns freely in the plate, and, on a level with the two ends or sides, it is swivel-jointed to a taper pin of steel, which, when bent down, takes into a notch underneath the hinge on the side of the buckle. To fasten a strap &c., the top portion of the central pin is held upright and is passed through a hole in the strap; the top joint of the pin is then bent down into the notch, and the lid is shut and fastened by the catch. When the fastener is required as a harness or strap buckle, it has a small link or bar on one side for the attachment of the harness or strap; when it is used for harnessing horses to vehicles, it is screwed to the shaft or pole.

3251. Prosser, W. Dec. 1. [*Provisional protection only.*]

Fastening straps and bands. A tongue is formed in a flat plate "by cutting a piece of the plate on three sides, leaving the back or fourth side uncut;" and "a little further back than this tongue and parallel with it a lap is formed by making two parallel cuts in the plate, and leaving the ends of the slit thus formed uncut." To fasten two loose ends, "the above arrangement is doubled," but to fasten a single loose end, "the above plate with a single tongue is sufficient." In order that the tongue may not pass through the hole out of which it has been cut, either the tongue is enlarged by pressure or the area of the hole is diminished by corrugating the plate.

3314. Hall, J. Dec. 7. [*Provisional protection only.*]

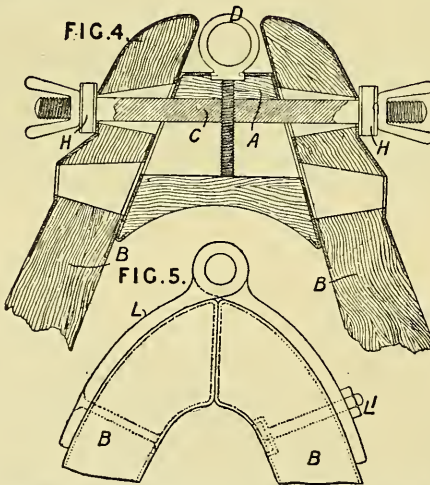
Fastening traces &c. A fastening for traces and

other parts of harness is formed of a piece of sheet metal bent so that two sides correspond, indentations in one side of the piece taking into a groove in a toothed ratchet pin passed between the two sides. One end of the pin is provided with a knob or button to be passed through the article to be fastened, the other end being provided with a stud

or projection to prevent the complete withdrawal of the pin. The upper edges of plate are connected by rivets, preferably three, one of which secures a knobbed pin which engages the ratchet pin, while another secures a steel spring which passes under the third rivet and takes into a notch in the knobbed pin.

A.D. 1872.

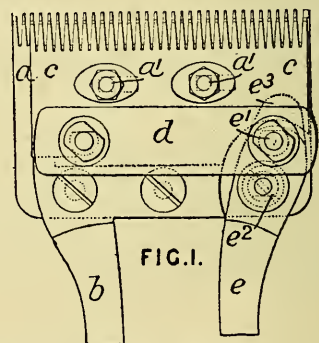
133. **Lake, W. R.,** [*Robbins, Z. C.*].
Jan. 16.



Collars, neck ; fastening.—The side pieces B of the collar, Fig. 4, are preferably made of wood, and their upper ends are tapered on the inside to fit a wedge-shaped connecting-piece A held in place by a bolt C. The bolt hole in the connecting-piece may be elongated so that the piece A may be moved up or down, for lengthening or shortening the collar, by means of a set-screw D. Further adjustment may be effected by changing the bolt C to other holes in the side pieces. India-rubber springs or washers may be fitted under the nuts, as at H. In another arrangement, the set-screw D is dispensed with, the bolt C being passed through a round hole in the connecting-piece A. The

lower ends of the side pieces B are connected by a strap or other flexible coupling. Fig. 5 shows another arrangement, in which the upper ends of the side pieces B meet each other and are secured together by a hinged coupling, the flap L of which is fixed to one side piece, the other flap being detachably secured to the other side piece by a bolt L'. The side pieces of the collars are fitted with draught clips and terrets.

139. **More, J. W., and Norman, J.**
Jan. 17.



Horse clippers and the like.—The lower comb a is fixed to one handle b. The other handle e is pivoted to the comb a at e^2 and is connected to the upper movable comb c by a link d pivoted to the comb at one end and to the handle e at e^1 . A projection e^3 on the handle e goes between the combs and prevents the handle from working loose. The comb c is guided by studs and slots a^1 .

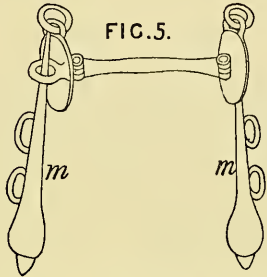
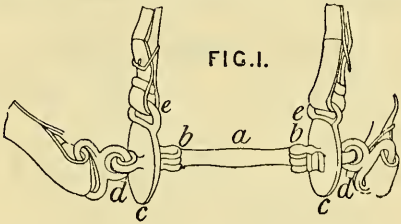
178. Doudney, D. A., and Adams, H. O.
Jan. 19. [Provisional protection only.]

Whips.—A hollow receptacle for holding camphor or other disinfectant or perfume is adapted to the handles or mounts of riding-whips &c. The mounts are fitted or arranged with means for opening and closing the receptacle. The disinfectant &c. may be contained in a cavity in the mount or handle.

208. Tergolina, Vincenzo, Count di.
Jan. 23.

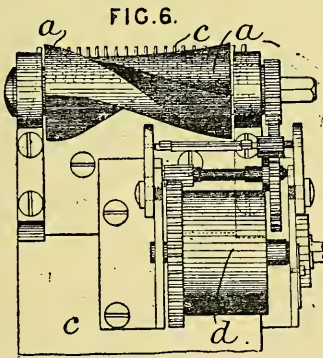
Bits.—The mouth bar *a*, Fig. 1, is jointed at the ends *b* to the side plates *c*. Normally these plates are at right-angles to the mouth bar. They carry rings *d* for the reins, and eyes *e* for the head straps. The power of the bit may be varied by rounding off the back inner edges of the plates or shaping them so that they project inwards, or the lugs to which the rings *d* are attached may project considerably or be made double. Fig. 5 shows the application to a curb bit. The lower ends of the side levers *m* are loaded, in order to give immediate

relief when the reins are slackened. In modifications, the bit is made with a joint in the middle of

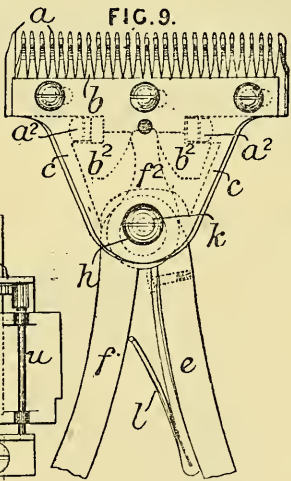
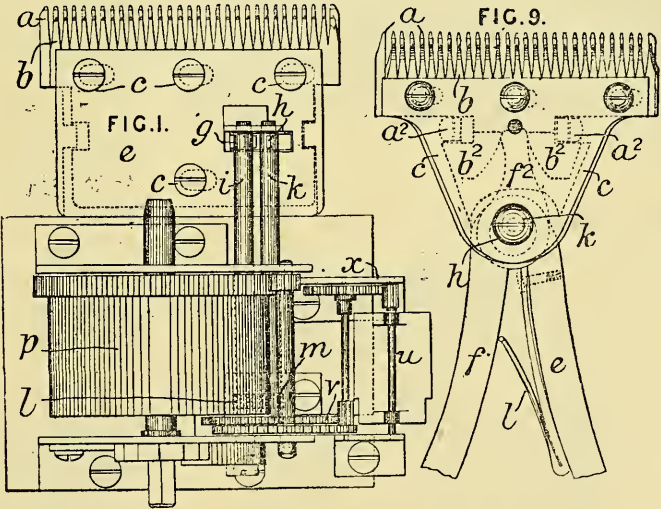


the bar only, or the mouth bar is cranked. The side plates may be in perforated or open work.

378. Holland, H. Feb. 5.



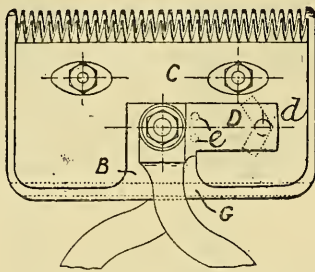
Horse clippers and the like.—In one arrangement, shown in Fig. 1, the reciprocating comb *b* is driven by a spring barrel *p*. A short rack on the comb is engaged alternately by pinions *g*, *h*, each having two teeth, on spindles *i*, *k*. The spindle *k* is driven by suitable gearing from the spring barrel, and drives the spindle *i* through pinions *l*, *m*. A flyer *u*, connected by bearings *x*, *v*, regulates the speed. The comb *b* is guided by screws *c* passing through the cover *e* and the comb *b* into the fixed comb *a*. The driving-mechanism is covered by a cap, and the clipper is held by the foundation plate or by a handle on the plate. In another arrangement, shown in Fig. 6, a rotating cutter *a* with helical blades is driven by a spring barrel *d* and acts in conjunction with a straight cutter at the base of a comb *c*. In a clipper for use in one hand, shown



in Fig. 9, one handle *e* is fixed to the bottom comb *a* and the other *f* is pivoted on a boss *h*. An extension *f*² of the handle *f* engages abutments *b*² on the movable comb *b*, and reciprocates it by the alternate action of the hand and a spring *l*. A screw *k*, passing through the cover *c* into the boss *h*, holds the parts together. Faces on the handle *f*, engaging faces on the comb plate and the cover *c*, steady the handle. The movable cutter is guided by studs *a*². In a modification of this arrangement, the handles are adapted for use with both hands, and the abutments *b*² are formed by screw pins.

395. **Smith, G.** Feb. 7.

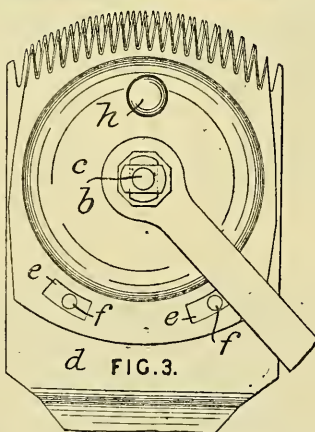
FIG. 1.



Horse clippers and the like.—The movable comb C is actuated by a crank D on the movable handle. A stud *d* on the crank enters a V-shaped slot in the comb and gives it a double reciprocation for each reciprocation of the handles. Stop-pins *e, e* limit the motion of the crank D. A spring may be used to open the handles. A bar or roller G under the fixed comb B forms a rest for the clipper and ensures an even cut.

522. **Hinton, F.** Feb. 17. [*Provisional protection only.*]

Collars, breast.—The breast collar consists of an outer part of leather, or other strong material, combined with a lining of india-rubber tubing or bags capable of holding air and conforming to the shape of the animal's breast. The tubes or bags are arranged in one or more rows. The inflated lining prevents chafing.

662. **Fitzpatrick, B.** March 4.

Horse clippers and the like.—The combs are formed on arcs of circles, the teeth being kept parallel with one another. The top plate *c* is attached to the bottom plate *d* by a bolt *b* on which it turns. Stop-pins *f* in slots *e* prevent over action. An oil-hole in the top plate is closed by a stopper *h*.

713. **Littlejohns, S.** March 8. [*Provisional protection only.*]

Saddles; terrets.—To facilitate the release of a fallen horse, the "gullet-plate" of the part of the harness known as "the pad" is made in sections, which are held together by the screws of the terrets. By turning the screw of one or both of the terrets, the pad separates into three pieces, and the harness falls off.

1067. **Render, F.** April 11. [*Provisional protection only.*]

Bridles.—In an arrangement in which one rein only is used for riding and driving, an intermediate spring is fitted between the single rein of the "easy part of the bit." A hanging loop connects the rein to "the curb or other such part," the loop being brought into operation when the spring is extended beyond a certain point.

1141. **Alekan, F., and Alekan, I.** April 17.

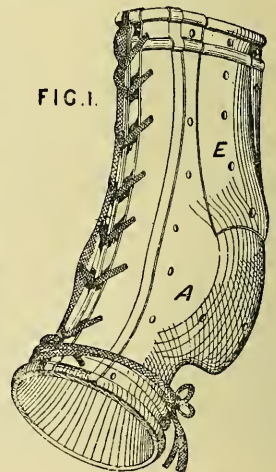
Fastening.—Relates to screw buttons which may be used for saddlery, harness, coach furnishing, &c. The lower plate of the button has an aperture *c* extending from the edge to the centre, the edges *a* of which are bent, one upwards and the other downwards, so that the plate approximates to a screw. By inserting one of the bent edges into a small hole and turning the plate round, it screws into place. The lower plate may have two apertures or may be made in various patterns.

FIG. 1. FIG. 5. FIG. 6.

1258. **Benson, M.,** [Lewis, W., and Way, D. T.]. April 27.

Horse-boots.—To support the muscles, tendons, and ligaments of the legs of trotting and racing horses, an elastic stocking A, made of india-rubber, is laced round the leg; it is stiffened by ribs on its outer surface and is perforated to allow of the escape of perspiration. Additional pads may be applied to the stocking at E.

FIG. 1.



1334. Darlow, W. May 2. [*Provisional protection not allowed.*]

Magnetic harness; clothing for animals.—Magnets in the form of magnetized strips, plates, or particles of steel &c., or chains, wires, or the like, combined with india-rubber or with resinous or bituminous substances, are stated to be worked up into fabrics and used for harness and horse cloths, amongst other applications.

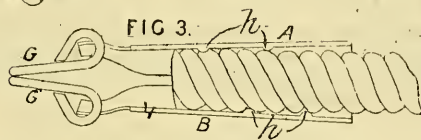
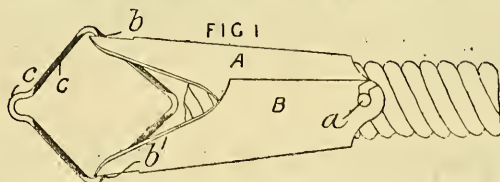
1388. Engel, L. May 7. [*Provisional protection not allowed.*]

Whips.—Thermometers are attached to the handles of whips &c. The thermometer may be of any pattern &c. and size to suit the handle to which it is attached.

1425. Lake, W. R., [*Alexander, T. H.*]. May 10.

Fastening traces and straps. Relates to a clip which can be used for fastening rope or round-leather traces, either to the whipple-tree or to the collar, and can be modified so as to be suitable for flat traces. Fig. 1 shows a clamp made in two semi-cylindrical parts A and B hinged by rivets *a* in such a manner as not to obstruct the passage of the trace. Holes *b*, *b'* are made in the clamp, and through them passes an "irregularly - formed" elliptic ring C. When the ring is turned with its greater axis from *b* to *b'*, the clamp is wide enough open to enable the trace to be inserted. Normally the shorter axis is from *b* to *b'* and a tension at *c* increases the grip on the trace. The ring *c* may be made continuous, or divided and

hooked. In the modified form shown in Fig. 3, the two parts A and B are joined by horns and eyes instead of by rivets. Each part is provided with a



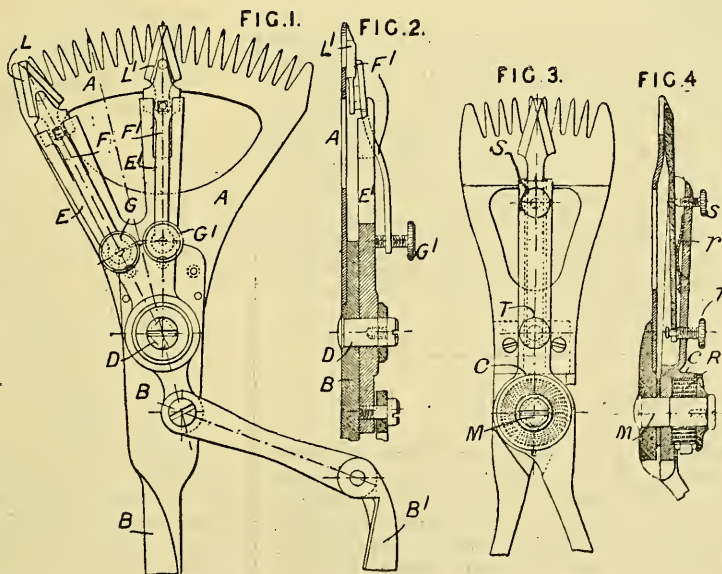
hook G, a common ring passing through these hooks. Ribs *h* and spikes prevent slipping.

1588. Muratori, C. May 24.

Materials.—Relates to the manufacture of a material which may be employed for making harness for artillery wagons and commissariat carts &c. Fibrous materials or fabrics are soaked in a strong tannic solution, obtained by boiling oak bark, gall nuts, or other substances containing tannin, until they acquire a brownish tint, after which they are dried and passed under a mangle. The material is then ready for use. When it is required to put several layers together, a glue made of flour is employed. Alum is added to render the whole incombustible. Several layers may be fastened together with screws or nails, or sewn together, and finally the whole is submitted to pressure.

1903. Hunt, B., [*Wehrlein, E.*]. June 24.

Horse clippers and the like.—The object is to facilitate single - handed working of shearing and clipping instruments. Figs. 1 and 2 show a sheep-shearing apparatus in which the handles B, B' of the fixed and moving cutters are connected by a spring bend. The moving cutters L, L' rotate about the pin D, and are carried across the cutter plate A on the handles being pressed together or released. Spring levers F, F' pass through slots in the blade holders E, E', and press the blades L, L' upon the plate A, the pressure being regulated by screws G, G'. Figs. 3 and 4 show an instrument of small size in which the



handles are terminated by finger-rings. At the pin M upon which the two branches turn, there is a barrel *c* containing a spiral spring R, Fig. 4, so arranged as to tend to separate the handles. The pressure between the blades is regulated by a combination of a flat spring *r*, Fig. 4, with screws S, T.

2077. Bonneville, H. A., [*Fabre, J. M.*].
July 10.

Bits.—The mouthpiece is made flat with rounded edges and its ends are pivoted on the branches, which are also movable, so that only the flat part bears on the bars.

2080. Webb, G. July 10.

Sun and weather screens.—A shade for protecting draught horses consists of canvas, oiled cloth, or other material stretched over hoops or ribs of wood, iron, &c. It is supported a few inches above the horse's back, thus leaving a passage for a current of air. The ends of the ribs may be secured in loops on the shafts or poles, or they may be connected to one or more balance rods carried by the horse, the rods being curved behind and joined by a movable bar in front; or loops on the ends of the hoops may fit on to a metal traveller or rod fixed at its ends to the shafts, so that the shade can be drawn backwards and the ribs turned over and dropped behind the horse when not in use. The shade may have a hood to cover the neck and head of the animal, openings being provided for the passage of the reins.

2374. Willis, R. Aug. 9. [*Provisional protection only.*]

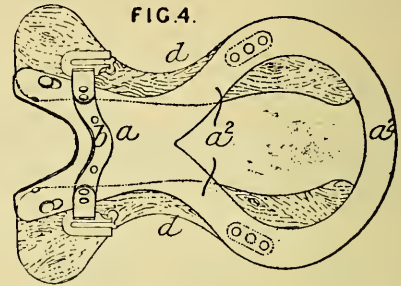
Horse clippers and the like.—On the comb plate which has fixed to it a guiding-handle is "a transverse projecting tenon bar," whereon the cutter plate slides, being cut with a corresponding dovetail groove and with a slot "parallel and over" the groove. The two plates are held together by a screw pin which passes through the comb plate, the tenon, the slot, and then through a curved flat spring which presses on the cutter plate. The cutter plate is actuated by a toothed rack and a toothed segment pivoted to the comb plate near the guiding-handle and provided with a lever or handle.

2486. Chaine, W. Aug. 21. [*Provisional protection only.*]

Saddle-bags for carrying water. A water saddle-bag, constructed of cotton &c. coated with vulcanized india-rubber, is closed at each end and fitted with an opening at the centre for filling. The underside of the bag, which rests on the horse's back, and the upper side are each made of one piece of fabric, and they are attached at their

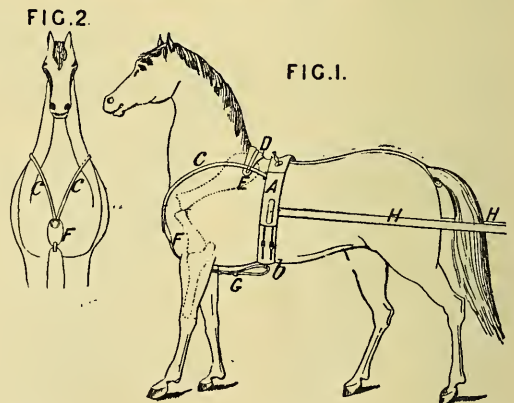
ends to a separate strip or gusset piece. Each end of the bag may have a small tube of vulcanized rubber for drawing off the water, and the central opening is strengthened by surrounding it with extra fabric.

2507. Clay, J. Aug. 23.



Saddles.—Relates to the manufacture of saddle-trees. A frame *a*, *a*² is cut out in one or more pieces from a blank of sheet metal. The hind part of the frame is bent so as to give a hollow figure, and the front part is bent to fit the back of the horse. A metallic rib *b* is riveted round the front of the frame. The frame, being supplied with the requisite webs, cloths, and leather to form the seat of the saddle, is attached by bolts and nuts to two pieces of wood *d*, similar in shape to the bars of an ordinary saddle-tree, and having their edges covered with leather. These bars may be made of papier mâché or similar tough material instead of wood.

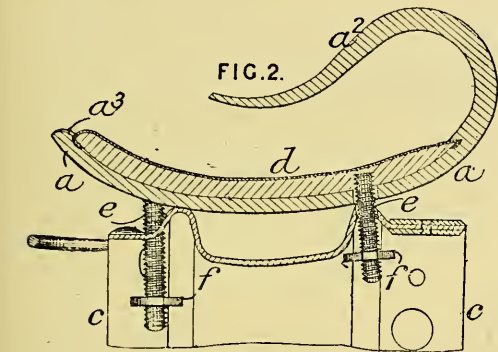
2590. Wyke-Smith, W. Aug. 31.



Harnessing, systems of.—The collars and hames as ordinarily used in harness are dispensed with, the pull coming from the pad which surrounds the "least movable part" of the horse's chest. A strap *c* passes over each shoulder from the saddle A to a pad F over the point of the breast bone. These straps pass through loops E on a pad D

which rests on the horse's neck above the withers. A strap G passes down from the breast pad F to the bellyband b. The traces H have the adjusting-strap and buckle at the splinter-bar end instead of at the collar end as usual, and are attached to the saddle by studs screwed into iron plates between the layers of the padding. These studs are adjustable as to height. A back strap supports the carriage shafts. In double harness a strap or light chain comes from a point corresponding to the hollow "behind the horse's last rib," and is fastened to the pole at a point about level with its shoulder.

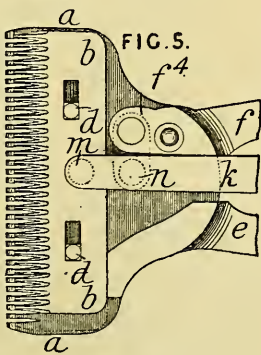
2641. Clay, J. Sept. 5.



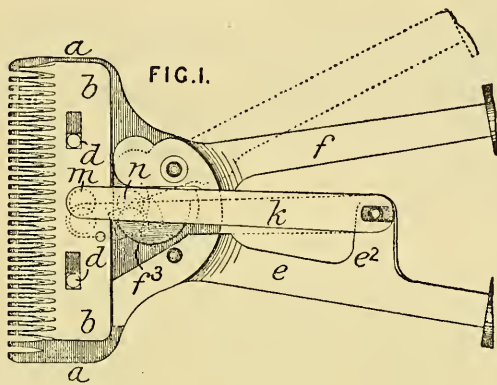
Saddles; rein-holders.—The top or seat of a harness saddle and its hook or rein-holder are cast, forged, stamped, pressed, or otherwise formed in one piece of iron, brass, German silver, or other metal or alloy. The seat *a*, Fig. 2, has an internal rim or beading *a³*, within which a filling-in plate of metal *d*, covered on its top with leather, is fixed. The plate *d* is secured to the saddle-tree *c* by bolts *e* and nuts *f*. The seat *a* may be fixed directly to the saddle-tree *c* by bolts and nuts &c. The seat *a* and the rein-holder *a²* may be made of two or more pieces of metal joined together.

2653. Jackson, G. Sept. 6.

Horse clippers and the like.—The cutting-plate *b*, Fig. 1, slides upon the fixed plate *a*, and is guided by pins *d* taking into slots in the cutter. A link *k* is hinged upon a projection *e²* on the fixed arm *e*, and carries at its other end a pin *m* which engages with the cutter *b*. A cranked piece *f³* on the moving handle *f*



carries a pin *n* which engages in a slot in the link *k*. This link, rotating on a pin-and-slot joint, is capable of the slight longitudinal motion necessary from the use of the crank *f³*. A cover encloses

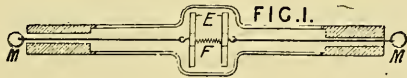


the moving parts, leaving only the cutting-teeth projecting. In a modification, the crank *f³*, Fig. 1, is dispensed with, and is replaced by a link *f⁴*, Fig. 5, connecting the moving handle *f* and the lever link *k*. This link then works on a pin joint. The link *f⁴* may also be extended beyond the lever link *k*, and is then connected to the cutter plate by another short link. The lever link may be shortened and jointed upon the fixed plate instead of upon the fixed handle.

3466. Selby, T. C. Nov. 20.

Clothing for animals.—A shield for covering the chest of draught and riding animals is made of leather, gutta-percha, vulcanized india-rubber, waterproofing, &c., and is suspended in front of the chest from the collar, or from the neck or withers &c. It may be attached to the saddle or other parts of the harness, and is held down by straps passing between the fore legs to the saddle band, bellyband, or girth, or by springs.

3743. Negroni, L. de. Dec. 10.



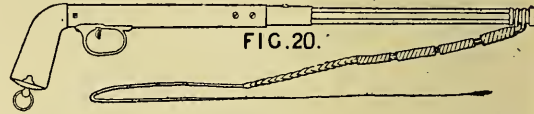
Bits; stopping runaway horses.—The bit is made hollow, and fitted with two stars or rowels E connected by a spiral spring F as shown. When it is desired to stop a runaway horse, the reins or cords attached to the rings M are pulled, and the stars E, having pointed or blunt ends, move outwards through four slits made along the bit. The sharp or cutting ends prick or strike against the interior

of the horse's mouth and cause it to stop. In a modification, the mouthpiece is made in two parts jointed together, each part containing a star

attached to it by a spring. A strap or rod, which may be lowered on to the horse's legs by a special rein, is fitted on the pole or shafts of the carriage.

3917. Clark, A. M., [*Dumonthier, C.*].
Dec. 24.

Whips for army drivers &c. are combined with breech-loading fire-arms, as shown.

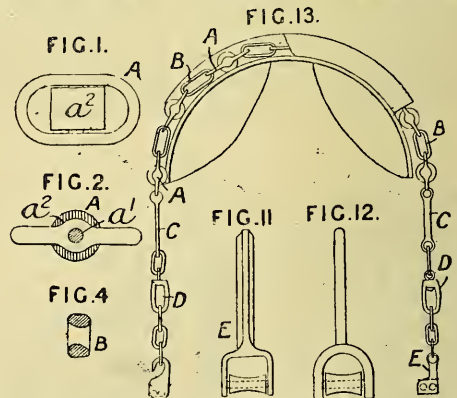


A.D. 1873.

8. Bergh, J. van den. Jan. 1. [*Provisional protection only.*]

Fastening traces. Relates to improvements in the mode of harnessing animals, and consists in apparatus for the speedy attachment and release of horses harnessed to vehicles. An apparatus resembling in form a buckle is fixed to the splinter-bar, shafts, or other convenient part; it consists of a metal plate having at one end a movable metal tongue, working in journals at one end, and secured at the other end by a movable catch hinged on the plate. The catch is capable of being inclined in the direction of the traces at a sufficient angle to keep the tongue in place when the trace is attached to it, and the tongue is so curved that, when released and pulled forwards, the trace will glide off. The trace, or part of it near the attachment plate, turns on a swivel. To release the horse, the catch is drawn back by hand or by a cord; the onward motion of the horse pulls forwards the tongue and the trace is drawn off, the horse being thus freed from the vehicle.

of roller-carrying links A united by smaller intermediate links B shaped in cross-section as shown in Fig. 4. The sides of the links A are flattened and receive pins a^1 on which the rollers a^2 rotate.



13. Haseltine, G., [*McClure, W. B., Graham, J. C., and Claughton, H. O.*]. Jan. 1.

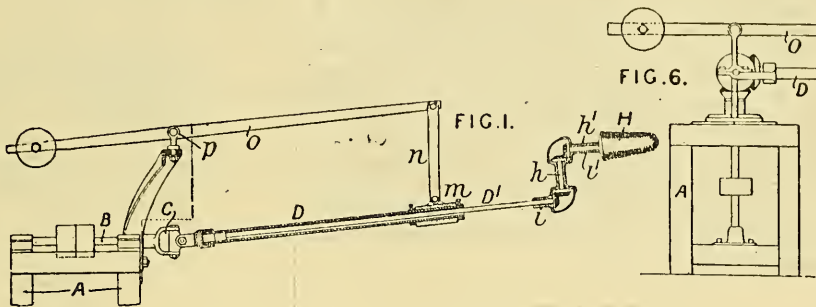
Backbands.—Relates to a back chain for cart saddles. The middle portion of the chain consists

The middle portion of the chain rests on the cart saddle as shown in Fig. 13. The rollers a^2 lessening the friction; to each end of this part of the chain is attached a bar link C formed of flat metal with an eye or ring at each end, and to each bar link is connected a swivel D. A series of links of ordinary construction are attached to each swivel, and to the end of each series a traveller E, as shown in Figs. 11 and 13, is connected.

27. Lake, W. R., [*Small, J. H.*]. Jan. 2.

Brushing - apparatus for grooming.

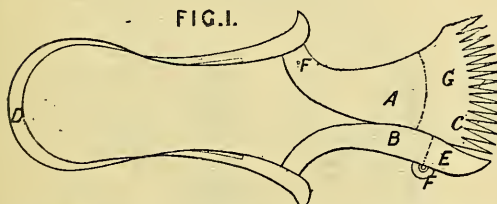
—A horizontal shaft B, mounted in a frame A, is connected by a universal joint C, to a telescopic shaft D, D', which imparts motion, through a shaft *h* and bevel gearing, to a conical brush H fixed on a spindle *h'*. The shaft and brush are counterbalanced by a weighted lever *o* mounted on a pivot *p* above the joint C and connected by a link *n* to a bearing *m*. The hollow shaft D may be square, or it may be round in which case the inner sliding shaft D' is grooved to engage a feather key. The shafts *h*, *h'* are carried in elbow bearings *i*, *i'*, by means of which the brush may be turned into any position. Fig. 6 shows a modification in which the main shaft is vertical and drives the shaft D through bevel gearing. The end of the shaft D is mounted in a



forked frame which is pivoted on a shaft *n* carried in a second frame bearing on a ring. The lever *o* is pivoted in a ball attached to the forked frame. The frames and gear-wheels thus form a universal joint which allows the shaft D to be turned at any angle. The brush H is made conical as shown to enable it to be introduced into the narrow spaces behind the ears, or under the heels &c. of the horse.

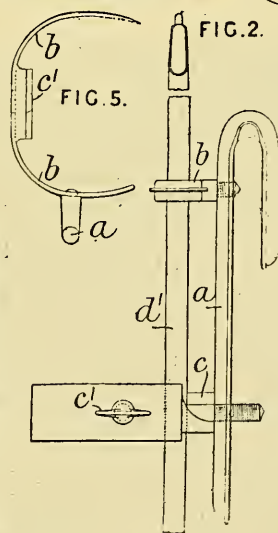
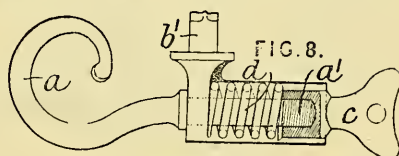
135. Norman, J. Jan. 13. [*Provisional protection only.*]

Horse clippers and the like.—The comb plate is fixed to a handle, and the cutter plate is moved to and fro by a handle mounted on a stud fixed below the cutter plate. A tooth or projection on the movable handle works in a recess in the lower end of the cutter plate. The guide-pins are placed in a line with the line of action of the tooth. Over the cutter plate is another plate provided with a projection at its lower end to pass over the stud of the movable handle, whilst its upper end is formed to bear upon the cutter plate. Two screws passing through this upper plate and through slots in the cutter plate keep the upper end of the upper plate bearing down upon the cutter plate, and another screw or a nut keeps it down on the movable handle.

661. Vaughan, E. P. H., [*Scheidecker, C.*]. Feb. 21.

Horse clippers and the like.—A steel plate G provided with teeth *c* is secured to the metal piece A. The steel blade E, ground on one side to a cutting-edge, is attached to the piece B, and the pieces A, B are attached to the ends of the spring D. The teeth and blade are inclined in opposite directions, and contact between them is secured by the twist

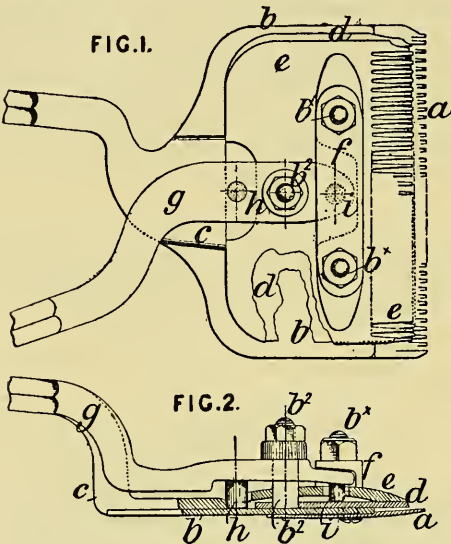
of the spring. Stops F in the part A limit the motion of the blade. The instrument may be used for clipping horses, sheep, and other animals.

742. Botwood, W. Feb. 28.

Rein - holders ; fastening.—Relates to adjustable rein guides and holders, and staples and draught - hooks for the kicking - strap and traces. The draught - hook *a*, Fig. 8, is attached by a bolt *b'* to the draw-bar or splinter - bar. The stem *a'* of the hook is screwed and a thumb - nut *c* is

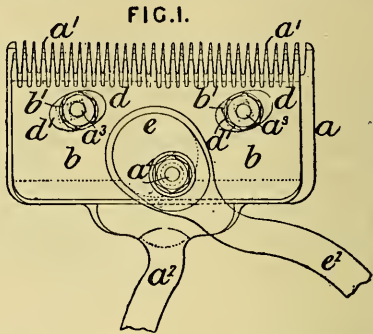
used to adjust the compression of the metal or india-rubber spring *d*. The rein guide shown in Fig. 2 is secured to the dashboard by the clip *a* formed of iron covered with leather and secured to the dashboard by the stem of the lower clip *c* passing through a hole and by the stem of the upper clip *b* pinching the dashboard. The thumb-screw *c'* draws the two portions of the clip *c* together and secures the square stem *d'* of the rein guide, and also serves as a rein-holder. A long driving-rail may be mounted on two stems *d'*. The kicking-strap is carried on staples *a*, Fig. 5, which are carried on plates *b* bent round and secured to the shaft by screws in lugs *c*.

871. Hore, C. March 11.



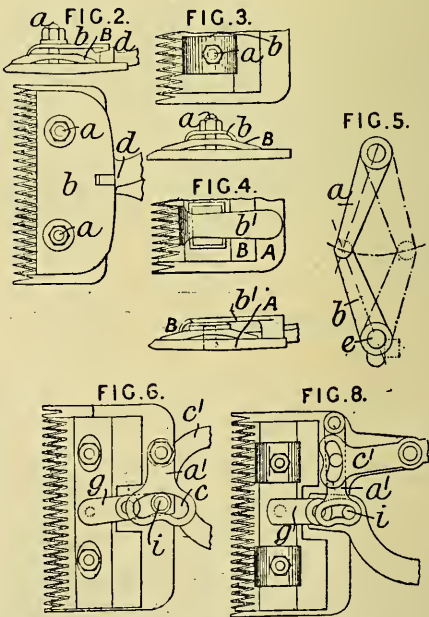
Horse clippers.—A comb *a* is combined with the cutters *d*, *e*, the teeth of the comb projecting beyond the cutters. The comb *a* is screwed to the comb plate *b*, which is riveted &c. to one of the levers *c*. Studs *b'*, Fig. 1, pass through slots in the cutters *d*, *e*, and are fixed to the plate *b*. A brass cap *f* is secured to the pins *b'*, which hold the comb plate, cutters, and cap together, and allow the sliding of the cutters. The cutters are actuated by the lever *g*, turning upon the fulcrum *b*² and having its upper end in a recess in the brass cap. Pins *h*, *i* are attached to the lever *g* and enter slots in the cutters *d*, *e* respectively, to give motion to them simultaneously and in opposite directions. The teeth of the comb do not correspond to the gauge of the cutters, and combs of varying gauge may be substituted for each other. The distance of the comb from the cutters may be varied by placing packing between the comb and comb plate. The pins *b'* are preferably rectangular in shape and act as guides to the cutters. The levers *c*, *g* are provided with adjustable telescopic handles, held in position by a metal ferrule provided with a set-screw.

1164. Bullows, J., and Bullows, A. March 28.



Horse clippers and the like.—The lower steel plate *a* is formed with comb teeth *a'*, ground smooth on the upper surface and fitting against the smooth under face of the top plate *b*, which is also toothed. The inner parts of the upper plate are recessed, and the two plates are held in contact by studs *a'*, which are secured in the plate *a* and pass through slots *b'* in the plate *b*, to receive the washers *d'* and nuts *d*. An eccentric *e* secured on the lever *e'* enters a circular hole in the plate *b* and turns upon the stud *a'*. The eccentric gives a curvilinear and oblique movement to the upper plate *b*. The lever *a'* is riveted to the lower plate.

1228. Clark, W. April 3.



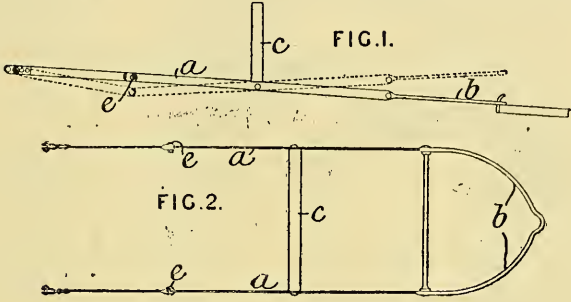
Horse clippers and the like.—The invention is described as applied to the horse clippers described in Specification No. 3076, A.D. 1869, but is stated to be applicable generally to horse clippers in which

a cutter plate slides over a comb. A suitable pressure is maintained between the cutter plate and the comb by means of concave washers or spring washers *b*, Fig. 3, placed on the guide studs *a*, or by a spring plate *b*, Fig. 2, held down by the studs *a* and pressed up at the back by a set-screw and block *d*, or by curved springs *b'*, Fig. 4, fixed to the comb *A*. The cutter plate *B* is concave so as to offer a yielding resistance. A double vibration of the cutter plate is obtained for each single vibration of the actuating-handle by means different from those

described in Specification No. 395, A.D. 1872, the cutter being actuated by a lever *g*, Fig. 6, a pin *i* on which is engaged by a curved slot *c* in a lever *a'* connected to the actuating-handle *c'*. Toggle-levers *a*, *b*, Fig. 5, actuated by the movable handle may similarly drive the cutter by the pin *e*. In a modification shown in Fig. 8, a quadruple motion is given to the cutter by a combination of two levers *a'*, *c'* with curved slots, the lever *c'* giving a double motion to the lever *a'*, and the lever *a'* a quadruple motion to the lever *g*.

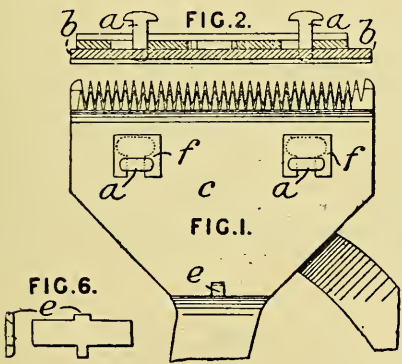
1232. **Maher, A. J.** April 3.

Traces ; fastening ; runaway horses, releasing.—Consists of appliances for hooking or securing horses to and for unhooking or releasing them from, tramway or other cars, omnibuses, or carriages while the same are in motion. The traces *a* are only flexible in certain points ; they are attached at one end to the collar, and at the other end, behind the horse, they are connected by a V-shaped bar *b* the central point of which hooks to the vehicle. The traces are supported by a strap *c* which passes over the horse's haunches, and they are jointed at *e*. When the rider depresses the point *e* with his feet, the bar *b* is raised, enabling it to be engaged with or disengaged from the hook on the vehicle. The joint may be at the union of the V-piece and the traces, and the V-piece may be raised by means of a bell-crank lever and a cord under the control of the driver. By a different arrangement of the bell-crank lever, the V-piece may be depressed and brought under a hook bending downwards. The cord may be led from the detaching-apparatus to the driver's box, so that runaway horses may be released. The



arrangement may be such that “by the driver of “the shaft horse checking his horse the pole has a “tendency to rise given to it sufficiently high to “drop on to the hook or to lift off.” The Provisional Specification states that the traces may be all in one piece, like a pair of ordinary shafts, and suspended by a spring across the horse's back. Or in another arrangement, “the driver can act on a “hook by means of a cord, which hook is placed “on the required point for drawing the vehicle.”

1314. **Twigg, G.** April 9.



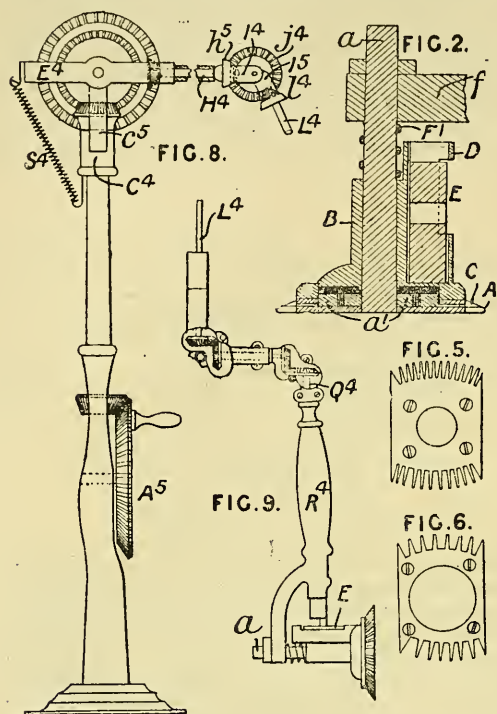
Horse clippers and the like.—Relates to shearing and clipping apparatus, chiefly for horses and consists mainly of means for adjusting or setting up

the plates forming the shears or cutters. Guide-pins *a* having crossheads are fixed to the lower plate *b* and passed through slots in the movable cutter and in the upper plate *c*. The heads may be turned to fix the upper plate, or keyhole slots may be formed in the plate as shown in dotted lines. The plates are secured together by thin forked cottar plates or bolts *f* slipped under the heads of the bolts *a*. The upper plate *c* is set up to keep the teeth of the cutter plates in position, by means of a wedge-piece *e*, Fig. 6, introduced under the heel of the plate and housed in a groove on its underside, or fitted with snugs engaging slots. In a modification, only one guide-bolt is used, and its upper plate is set up by means of a set-screw. In this case, the ordinary guide pins and slots are also used.

1352. **Haseltine, G.,** [Guernsey, J. W.]. April 14.

Horse clippers and the like.—Relates to machines for clipping or shearing horses, sheep, and other

animals. The comb or lower cutter A, Fig. 2 which consists of a disc having radial teeth, has rigidly attached to it a central steady-pin *a*. This pin is secured at right-angles to the comb by a disc *a*¹ riveted or screwed thereto. A drum B surrounds the steady-pin, and the upper cutter C,



which is formed of a steel ring having bevelled radial teeth, is rigidly attached to its lower surface. A side socket D, forming a part of the drum and having an opening on one side, carries a loose pin E adapted to work in the socket and form the connection with the crank-pin of the driving-shaft for imparting a reciprocating rotary motion to the upper cutter C. The main portion of the handle R⁴, Fig. 9, is tubular, and at the inner end is an overhanging arm *f* through which the upper end of the steady-pin projects. A spring F¹ is placed between the arm and the top of the drum to press the cutters together. The comb A has a larger number of teeth than the upper cutter C, the proportion being about eighty to sixty. Figs. 5 and 6 show cutters especially adapted for shearing sheep; the teeth are arranged at different angles and they radiate from the centre of the heel of the comb. In the general arrangement shown in Figs. 8 and 9, the handle R⁴ carrying the cutters is connected by brackets and tubes to a yoke E⁴ pivoted to a second yoke C⁵ swivelling by means of a socket C⁴ on the top of a standard. Motion is imparted from the hand-wheel A⁵ to the cutter shaft Q⁴ through the various pairs of bevel-wheels, as shown, the spindles of which are carried within the connecting-tubes. The tubes containing the spindles H⁴, L⁴ are connected by clevis-shaped brackets I⁴, J⁴ pivoted together by a spindle carrying the bevel-wheel j⁴,

with which gear both the pinions h⁵, l⁴. This construction permits free movement of the handle R⁴ in any direction. A counterbalance spring S⁴ connects the yoke E⁴ to the socket C⁴. Motion may be imparted to the machine by means of a pulley or steam power. A special machine for grinding the cutters is described.

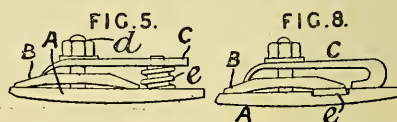
1513. Bridge, H. April 26. [Provisional protection only.]

Stirrups, arrangements of, to facilitate mounting. An additional stirrup hangs some distance below the ordinary stirrup, so that the right foot can be placed in it, after which the left foot can be placed in the ordinary stirrup and the horse mounted. A cord may be used to draw up the additional stirrup into a box or receptacle in the saddle.

1618. Spong, J. O. May 5. [Provisional protection only.]

Whips combined with tobacco pipes &c. The handle end of a whip is made hollow, and an amber or other mouthpiece is inserted. At some distance from the end, the whip is perforated, and the stem of the bowl of a pipe, or cigar or cigarette holder, is screwed or otherwise secured to the opening. The hollow part of the handle may be lined with any suitable material, and may extend beyond the perforation, to form a nicotine chamber.

1696. Clark, W., and Martin, R. May 10.

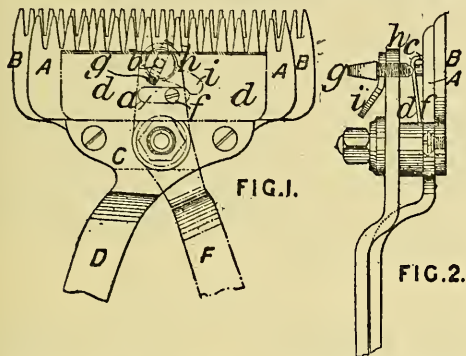


Horse clippers and the like.—Relates to clippers such as those described in Specifications No. 3076, A.D. 1869, and No. 1228, A.D. 1873. The cutter plate B, Fig. 5, is kept down on the comb plate A by a curved pressure plate C and nuts and washers on the guide-studs *d*. The rear of the plate C is pressed up by a spiral or plate spring *e* which compensates for wear. In a modification shown in Fig. 8, the pressure plate C is divided into two parts, one on each stud, and is bent as shown. The rear edge of the cutter plate may be pressed up by plate springs *e*, and, instead of the plate C being curved down to bear upon the cutter plate B, it may bear thereon through a washer on the stud.

1728. Bétis, P. M. May 12.

Horse clippers and the like.—Two straight or curved magnetized combs A, B, Figs. 1 and 2, are actuated by handles F, D. The movable comb A has a slotted opening *a* and an eye *b* which receives the pin *c*, Fig. 2, attached to the spring *d*. The

pressure of the spring *d* is regulated by the pinch-screw *g* provided with a lock-nut *h* operated by the handle *i*. A screw *f* fixed in the comb *B* works in the slot *a*, Fig. 1, and, together with the edge of



the foot *C*, acts as a guide to the movable comb. The movable comb may be constructed with two eyes sliding over two bolts, which may be used to adjust the contact of the combs, the screws being then fixed.

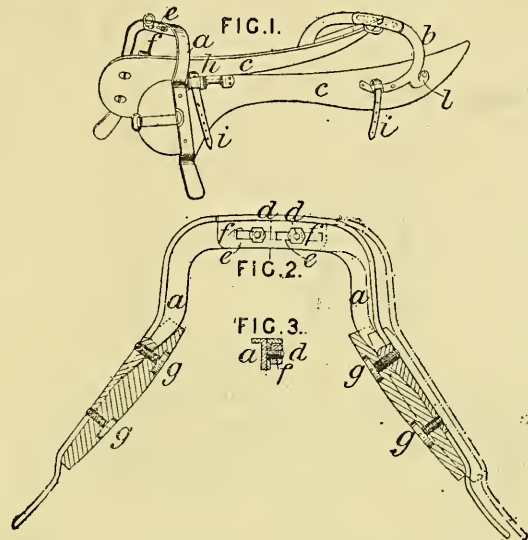
1979. Swift, R. June 2. [*Provisional protection only.*]

Saddles.—The foundation plate of the saddle is of sheet metal, bent to the proper shape by dies or otherwise. Two or more longitudinal metal ribs are soldered, brazed, or riveted to the foundation plate, or the ribs may be stamped out of the sheet metal. A hollow metal top is formed by stamping or otherwise bending one or more pieces of the required shape. The parts are connected by overlapping, seaming, soldering, riveting, or brazing.

2001. Blamiers, T. June 4.

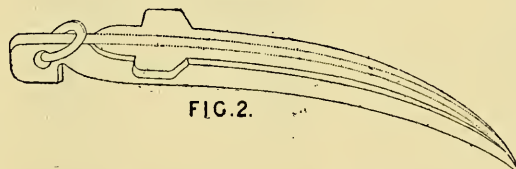
Saddles.—Saddle-trees for military and other saddles are made adjustable in width to adapt them to horses having broad or narrow backs. The front fork *a* is made of angle metal, and the rear fork *b* of either angle or flat metal. Each fork consists of two halves united by a sliding or lap joint, which allows the saddle-tree to be expanded or contracted and the side bars *c* to be adjusted to the angle as well as to the width required to fit the horse's back. The two parts of each fork are united by bolts *f* sliding in slots *e* and clamped by nuts *d*. The forks are united to the side bars by flat-headed screws *g* countersunk in the side bars and screwing into holes tapped in the forks. At the points where the front fork is attached to the side bars a part *h* of the web of the metal is bent up to form staples for the girth tabs *i* and the stirrup leathers. The rear fork *b* is made with an additional back stay *e* on each side at the point where it is attached to the side bars, and the front stay is bent to form a staple for the girth tab *i*, a split girth being employed. The girth tabs *i* are simply slipped through the staples, being retained by a small piece of leather fastened

to the upper end. The saddle seat may be fastened by securing a strip, sewn to its edge, in the lap joint of the rear fork. The strip is slotted and has its lower edge thickened to prevent it from



being drawn out of the joint. The forks of saddle-trees may be made of angle metal of **L**, **I**, or **T** shape in cross-section.

2090. Garrard, J. G. June 13.



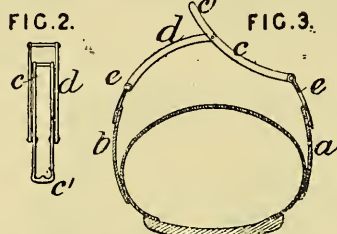
Tethering animals.—Horses are tethered by means of spikes or holdfasts made from angle, tee, channel, and other sectional iron bars, the pegs being straight or curved. Fig. 2 shows a curved spike having a link or hook at the top; just below this is a cross-piece or stop, and the blade is tapered towards the point from back to front.

2200. Newton, H. E., [*Maurissén, H.*] June 24. [*Provisional protection only.*]

Bits.—To vary the length of the lever action on the bit, the reins are attached to eyes or pieces which are capable of sliding in slots in its side cheeks. The pieces are held up in the slots by means of india-rubber springs attached to the upper part of the side cheeks. When the reins are pulled, the cheeks are drawn back and the movable pieces are then drawn down the slots. On releasing the reins, the springs draw the pieces up in the

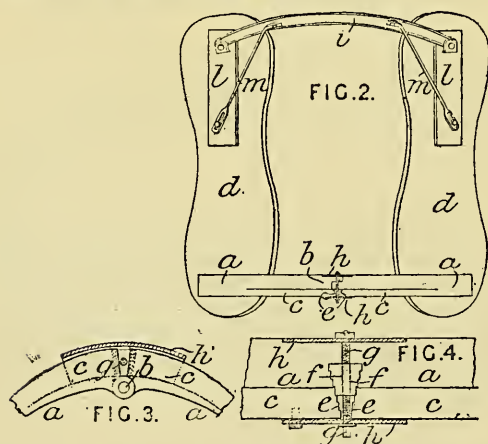
slots. In modifications, the movable pieces are made to run on round rods, or the reins are attached to levers having their centre of motion at the lower end of the side cheeks, to which they are connected by box springs.

2322. Wulff, J. July 4.



Fastening.—A fastening for shoes, harness, &c. consists of two curved links *d, c*, Fig. 3, made of brass, iron, silver, &c. and pivoted together, the links being attached to the article to be fastened so that they may fold upon or within each other. Fig. 2 shows the fastening unfolded and attached by straps *e* to the sides *a, b* of a shoe. To fasten the article, the link *c, c'* is turned until the curved part *c* lies within the link *d* upon the shoe.

2399. Robertson, H. July 11.



Saddles.—Relates to the construction of a saddle which is capable of being adjusted to the backs of horses of various sizes. The gullet plates *a, b*, Fig. 3, are hinged together in the centre of the fore arch, as shown at *b*, and they are strengthened by plates *c* placed edgewise over the arch and extending down to the two side boards *d*, Fig. 2. The contiguous faces of the strengthening-plate *c* are stepped or notched as shown at *e*, Fig. 4, and between them there is fitted a correspondingly-stepped metal wedge-shaped block *f*, which can be

adjusted by screw *g* to fit the various steps. A cap *h*, pinned to one of the strengthening-plates, is fitted over the adjustable block to keep it in position. The back cantle *i* is hinged at each end to a "rest plate" *l* secured to each sideboard *d*, and a safety bar *m* extends from the back cantle in a forward angular direction to each of the "rest plates." A slot in the foot of each safety bar allows it to adjust itself when altering the size of the saddle, which is done by turning the adjusting-screw *g* by means of a key so as to cause the block *f* to recede and allow the arch to be opened to the size required. In reducing the size of the saddle, the sides of the fore arch are brought the proper distance apart and the block *f* is caused to enter further in the space.

2405. Reynolds, S. July 12. [Provisional protection only.]

Fastening.—A snap-hook for harness is cast so that a hollow is formed which provides a seat for the spring and affords full play for its action. The shank of the hook may be riveted to a swivel eye so as to permit of the hook revolving. The spring of the hook may be deflected by the pressure of the thumb or by a lever attached to the spring or working on a lateral axis from the open or back side of the shank of the hook. The hook may be attached to the harness by a buckle or by a loop formed on the harness.

2635. Phipps, T. L. Aug. 6. [Provisional protection only.]

Horse clippers and the like.—Of the two serrated cutter plates employed, one is movable across the other, the connection being made by a projection on the fixed cutter engaging with a slot in the movable plate parallel to its cutting-edge. The pressure between the plates is obtained by means of a bow spring, a square hole in which fits over the square shoulder of a screw on the projection described and which is held in place by a nut on the screw. The projection may be dispensed with, and the screw then stands up from a recess in the fixed cutter. The spring is concave at the middle and bent round at the ends, so that, when placed upon the screw, the middle portion engages in the guide-slot while the convex ends press upon the movable cutter. A cover over the movable cutter is held down by the nut which secures the plates together. A movable lever handle is pivoted upon the fixed cutter, and its shorter arm engages with a slot in the edge of the movable cutter, which receives a reciprocating motion when the movable handle is operated to and fro. The fixed handle is hollow or cut away and is attached to the fixed cutter by two pins on its back, which engage with holes in the plate, and by a screwed pin which passes through both handles and the fixed plate. The movable handle is passed under the fixed handle and is held by a nut on the screwed pin which serves as the pivot.

2639. Pollock, S. S. Aug. 6.

Stopping and controlling runaway and restive horses.—

A veil or curtain of waterproof or other cloth is unrolled so as to cover the animal's eyes and nostrils. The curtain H is wound upon the spindle C, and the lower end is extended by a curved rod K. The spindle C is mounted in a tube A attached by two arms *b* to the curved back plate B which is attached to the bridle. A catch on a lever is held in the teeth of the wheel D by a spring secured to the interior of a cap which is placed over the end of the tube A. By pulling a string attached to the lever, the ratchet is released and the curtain falls.

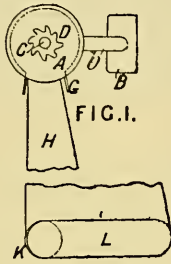
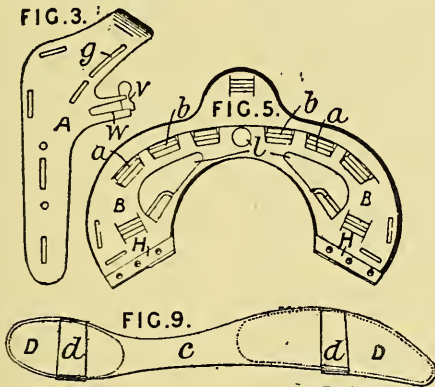
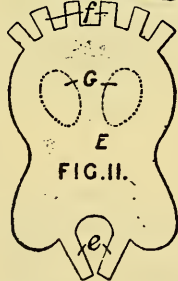
**2955. Newton, T.** Sept. 8.

FIG. 3.



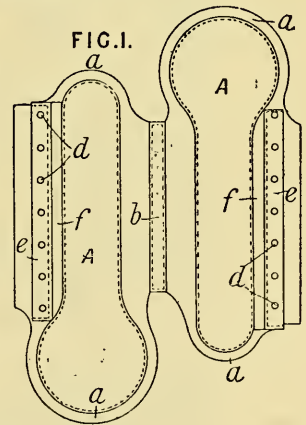
Saddles.—The seat of a cavalry, hunting, or other riding-saddle is made of one or more thicknesses of leather and is sometimes lined and strengthened with a thin steel plate or sheet of wire gauze. The head and cantle of the metal saddle-tree are cast in iron, steel, or brass, or are made of wrought iron, or stamped sheet metal and are slightly convex at the back. The head of the saddle-tree is constructed as shown in Fig. 3. The cantle is provided with shanks H, Fig. 5, having a slot to which the girth is attached and barred holes *a* for attaching the saddle seat. The side bars *c*, Fig. 9, of the saddle-bar are slightly concave and are made of wrought-steel plates, each side bar being provided with two curved pads D of felt with a backing of cork &c. covered with leather, canvas, &c. The pads are fixed near each end of the inner surface of the side bars by means of glue, copper wire, or thongs. A strip *d*, made



in one piece with a side bar, is folded down to make the part to which the cantle and head are riveted of double thickness. Tags *e*, Fig. 11, of the seat E pass through slots *g*, Fig. 3, in the head A and tags *f*, Fig. 11, pass round bars *b*, Fig. 5, of the holes *a* in the cantle B, the whole of the tags being doubled back and sewn to the underside of the seat E, Fig. 11. Holes G are made in the under linings of wire gauze or steel plate to form recesses for equalizing the pressure on the seat of the rider. The girths are attached to the head and cantle by metal links or loops fixed to the head and the cantle by short straps secured by copper wire &c. The stirrup leather, which is single, is made in one piece with the girth strap attached to the head, a screw being fitted at the bend. For a military saddle, the saddle flap is provided with loopholes to retain the carbine bucket, which is also connected by straps to the cantle, steel plates covered with leather sewn to the back of the flap being inserted to strengthen the loopholes. The saddle-tree head is provided with spring bars *w*, Fig. 3, cast in one with the head; the spring bars may be provided with a spring latch *v*. Holes are made in the head and cantle for attaching straps &c.

2965. Archer, H. Sept. 10.

Horse-boots.—A legging for horses, mules, and other animals consists of two parts A, Fig. 1, of leather &c. rounded off at the upper and lower edges *a* and connected by a stiffening band or strip of leather *b*. The leggings are fastened by cords or laces passing through metal eyelet-holes *d* formed in bands or strips *e* fixed to the legging on each side, strips of india-rubber webbing *f*, *f* being inserted between the strips *e* and the body of the legging for additional elasticity.

**2970. Phipps, T. L.** Sept. 10.

Horse clippers and the like.—Relates to clippers for clipping horses and other animals, and for other purposes such as clipping the grass of lawns. In one arrangement, shown in Fig. 1, the movable comb plate *c* is pressed down on the fixed comb plate *b* by a bow spring *f* regulated by a nut *h* on a stud *d*. This stud preferably forms part of a guide-block *d*, Fig. 3, fixed to the plate *b* and passing through a guide-slot *e* in the plate *c*. The block *d* may be dispensed with, the bow spring

being curved inwards to form a guide for the plate *c*, as shown in Fig. 10. The movable handle *n* is pivoted on a pin *p*, Fig. 1, and has a projection *n*² engaging a notch in the plate *c*. The head of the

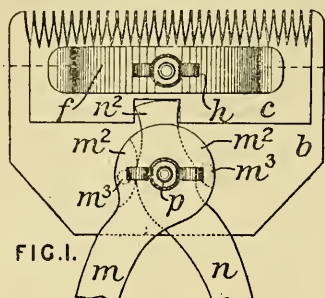


FIG. 1.

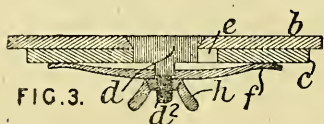


FIG. 3.



FIG. 10.

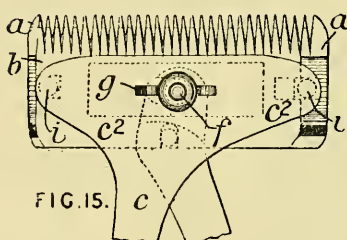


FIG. 15.

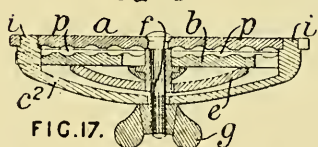


FIG. 17.

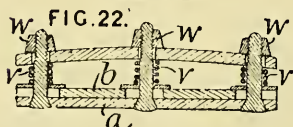


FIG. 22.

fixed handle spans the head of the handle *n* and has studs *m*³ engaging holes in the plate *b* and projections *m*² which bear on the plate *b* and form stops for the movable handle. In a modification shown in Figs. 15 and 17, the head of the fixed handle *c* is extended to form a cover plate *c*² and is secured by a nut *g* on the pin *f*. Stud *i* on the ends of the part *c*² pass through guide-slots in the movable comb plate *b* into holes in the fixed comb plate *a*. The movable handle is pivoted on the pin *f* by a boss *d*² and drives the plate *b* by means of a stud *h*. A bow spring *e* regulates the pressure between the plates. Grooves *p* in the opposed faces of the plates *a*, *b* are filled with wool or other absorbent charged with lubricant, which is pressed out and distributed over the moving parts

when the clipper is worked. A cottar may be used instead of the nut *g*. In another modification, shown in Fig. 22, the pressure on the movable comb plate *b* is regulated by helical springs *v* and nuts *w*. The wooden parts of the handles are united to the metal shanks by tapered screws on the ends of the shanks.

2980. Gedge, J., [Zimmerman, R.]. Sept. 11.
[Provisional protection only.]

Horse clippers and the like.—An instrument for clipping or shearing animals consists of two main pieces *A*, *B* jointed by a screw *b* and provided with a spring *C* to hold them apart. A series of blades *F* are fixed by screws *u* on the plate *A*. The knife *E* is mounted on the piece *B*, and is guided over the blades by the clamp *D*. A wedge *G* pivoted on the piece *B* passes under the clamp during the cutting stroke and holds the knife and blades in contact. At the notch *d* the wedge *G* is liberated, and the blade, being free to rotate, returns with the wedge outside the clamp, the pressure thus being relieved. The clamp end places the wedge in its original position, the pin *e* holding it so that it will again pass under the clamp during the cutting stroke.

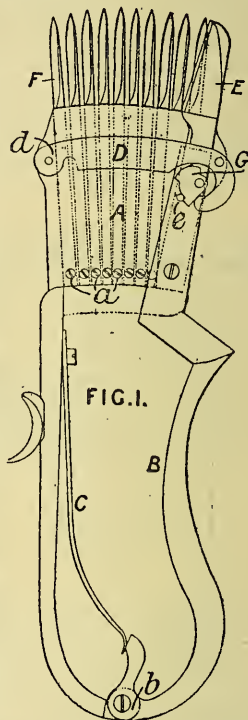


FIG. 1.

3042. Peters, C. Sept. 16.

Collars, neck; fastening.—Horse collars are made to open and are fitted with special closing-fastenings so that they may be put on over the neck instead of over the head. A large number of fastenings are shown and described. Fig. 1 shows a form of

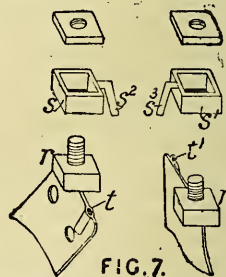


FIG. 7.

spring catch or clasp fastener for closing the open top ends of a collar. The plates *d*, *d*¹ are secured to the open ends of the collar. The plate *d*¹ has a flange provided with a spring catch *a* which engages with a snap fastener on the flange *b* of the

plate *d*. The spring catch may be formed of two pivoted hooks pressed apart by a spring, in which case it engages a slot formed in the flange. In another form, a pin on one plate passes longitudinally into a split spring socket on the other.

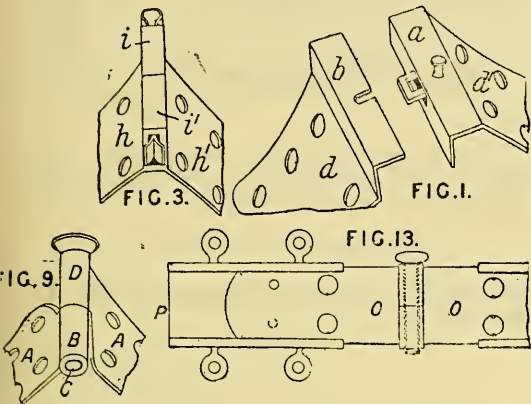
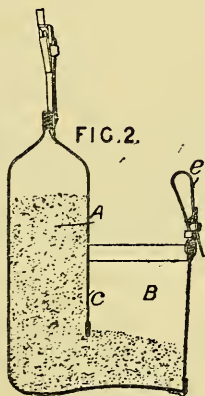


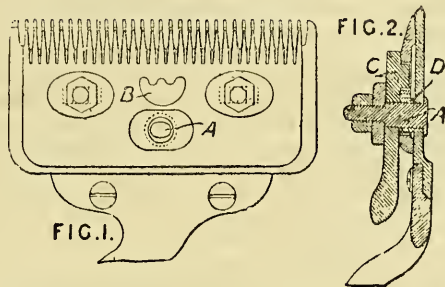
Fig. 3 shows another form, in which square sockets *i*, *i'* are formed on the plates *h*, *h'* to receive a split pin. The plates may be made to terminate in bevelled flanges which fit one over the other and are secured by a set-screw. Or they may be fitted with square-headed studs *r*, *r'*, Fig. 7, over which fit washers or collars *s*, *s'* having tongues *s²*, *s³* for engaging sockets *t*, *t'*. One of the plates may be fitted with a hinged flap slotted to engage turn-buttons on the other plate. The hinged flap has two sets of slots, by which means the collar may be lengthened. In Fig. 9, the plates *A* are shown fitted with sockets *B*, *D*, one of which *B*, is threaded to receive the screw pin *C*. One of the plates may have a central socket and the other two side sockets, like a hinge. The sockets may be attached to the plates by means of screws, so that the collar may be lengthened or shortened. Fig. 13 shows a slide arrangement *O*, *P*, by means of which the length of the collar may be adjusted.

3271. Holding, J.
Oct. 9.

Nosebags are formed with a compartment *A* for containing the food and another *B* to which the horse has access. The two compartments communicate with each by an aperture formed at the bottom of the dividing-piece *c*. The bottom of the bag is lined with metal gauze. The bag is suspended with the part *A* below the horse's neck; a strap *e* is provided for attachment to the head gear.

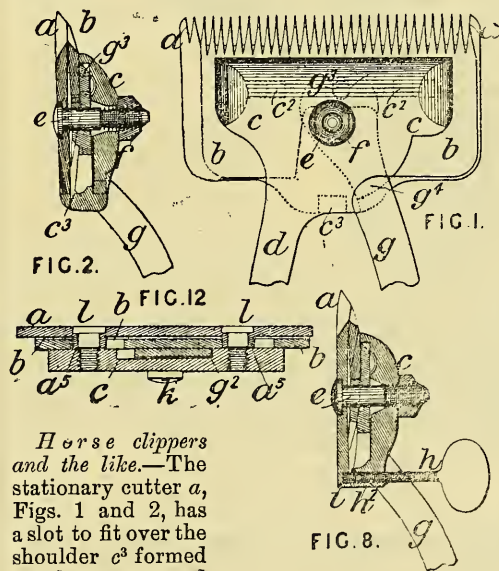


3516. Plant, W. Oct. 29.



Horse clippers and the like.—The top comb plate is formed with a toothed opening *B*, Fig. 1, and the movable handle with a corresponding projection *C*, Fig. 2, which fits easily in the opening *B* and communicates motion to the top comb plate. The motion in each direction is limited by the projection *C* locking in the opening *B*. The movable handle is formed with a boss *D*, Fig. 2, which embraces the fulcrum pin *A* and gives support to the handle in line with the part *C*. The pin *A* may be formed with a collar fitting close to the lower comb plate, so as to steady the pin and act as a bearing for the boss *D*.

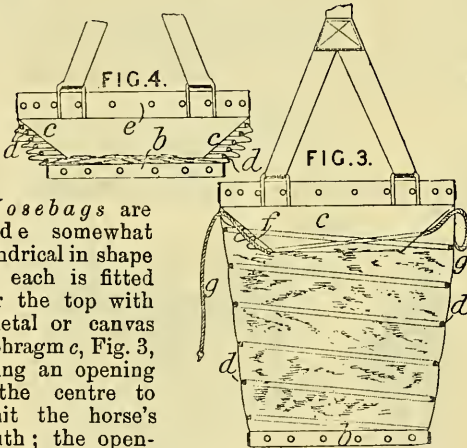
3723. Holyoake, W., and Brown, C.
Nov. 15.



Horse clippers and the like.—The stationary cutter *a*, Figs. 1 and 2, has a slot to fit over the shoulder *c³* formed on the cap *c*, and is secured to the cap by means of the screw *e* and nut *f*. The handle *d* may be formed with or attached to the cap *c*. To guide the movable cutter *b*, two projections *c²* formed on the cap pass through slots in the cutter *b* and into holes in the cutter *a*. To actuate the movable cutter, the stud *g³* of the handle *g*, pivoted on the screw *c*, enters a slot in

the cutter *b*, the cap being cut away to allow the movement of the handle, and the part *g*¹ of the handle being undercut to embrace the cap *c* when in position. In a modified arrangement, Fig. 8, a thumb-screw *h* is screwed through the cap *c*, its plain end entering a hole *i* in the cutter *a*, the hole in the cap through which the screw *c* passes being conical to allow of the cutters being tilted when adjusted by the screw *h*. In the arrangement shown in Fig. 12, the screws *k*, upon which the movable handle turns, passes through the cap *c*, head *g*² of the movable handle, and movable cutter *b*, its plain conical end entering a recess in the cutter *a*. The screws *l* bind the cutter *a* to the cap, the snugs *a*² acting as guides for the cutter *b*. The rear part of the cutter *b* is raised out of the plane of the other parts and provided with a slot to gear with the stud on the actuating-handle.

3749. Petty, J. H. Nov. 19.

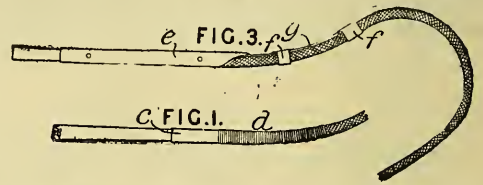


Nosebags are made somewhat cylindrical in shape and each is fitted near the top with a metal or canvas diaphragm *c*, Fig. 3, having an opening in the centre to admit the horse's mouth; the opening may be closed by a slide *f* operated by cords *g*. The bag is fitted internally with a spiral spring *d*, the contraction of which causes the bottom *b* to approach the top and keep the corn or fodder up to the horse's mouth, as shown in Fig. 4. The sides of the bag are continued a short distance above the diaphragm, to prevent waste of the fodder. The bottom of the bag is provided with a loop of leather for the purpose of opening it.

3752. Holding, J., and Nicholson, W. H. Nov. 19.

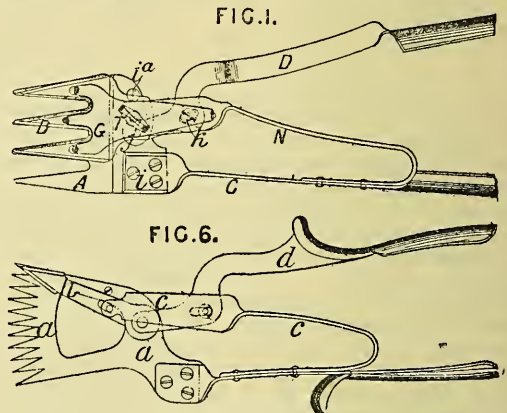
Whips.—To provide a durable flexible connection between the thong and the stock of a driving-whip, the thong is connected to the stock by a metal sleeve *c*, Fig. 1. A spring *d* envelopes the thong and is brazed to the sleeve. In another arrangement, the thong is secured to a flat spring *g* by the tubular parts *f* and the socket *e*. The socket and tubular parts are formed by bending the strip of

metal at those parts until the edges meet. Perforations are formed in the socket to facilitate the connection with the thong and the stock by means



of rivets or by sewing or other means. The spring may be electroplated or coated with a metal or alloy, to prevent oxidation.

3951. Bouttier, L., and Couhault, M. J. B. Dec. 2.



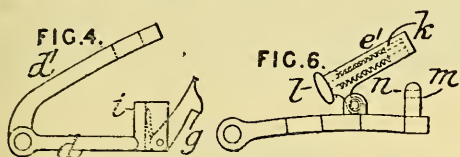
Horse clippers and the like.—In the apparatus for clipping sheep, shown in Fig. 1, a three-pronged comb *B* is made to work over a four-pronged comb *A*, and cutting-edges are formed on both sides of the teeth so as to cut in each direction. The handles *C*, *D* are struck up from sheet metal to a suitable form. The handle *C* is detachably connected to the comb plate *A* by screws *i*, and the handle *D* is pivoted to it at *j*. A spring *N* riveted to the handle *C* and twisted into two planes at right-angles serves both to keep the handle *D* down on the plate *A* and to return the movable comb *B* which is connected to it by a screw *T* and a pressure plate *G* adjusted by the screw *T*. The handle *D* communicates motion to the comb *B* in one direction by means of a pin *k*, and the spring returns it. A stop pin *i*^a limits the outward motion of the spring. In a modified arrangement shown in Fig. 6, a single blade *h* is made to move over a comb *a* by a handle *d* and spring *c* arranged as compound levers.

4003. Heywood, R., [Heywood, J.]. Dec. 5. [Provisional protection only.]

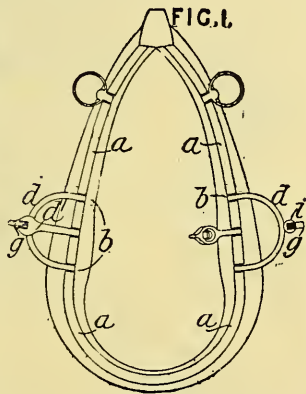
Collars, neck.—The collar is provided with a fastening which can be readily released so that the

collar can be placed in position on the horse's neck without being passed over the head. The fastening consists of two pieces of metal, one piece being provided with a bolt which passes into an opening in the other piece and is secured by a spring lever or latch entering a notch in the bolt. The latch is withdrawn by pressing upon a finger-piece. The part of the collar opposite the fastening may be provided with a hinge, and the hames may be attached to or form part of the collar.

4006. **Careless, I.** Dec. 5.



Collars, neck; fastening.—The hames are dispensed with and a metal rim *a*, Fig. 1, of round, half-round, or flat section, is secured round the collar and covered with leather. The traces or chains are attached to the collar by a fastening consisting of a bent bar *d* hinged at *b* to the rim *a* and provided with a lug *i*, Fig. 4, and a hook or catch *g*. The end of the trace or chain is passed over the lug and is kept in position by pressing down the hinged bar *d* so as to slip over the hook *g*. In another arrangement, the end of the trace or chain is passed over the lug *m*, Fig. 6, and is kept in position by a bolt *k* contained within the hinged barrel *e* and entering a recess in the lug. The bolt is kept in position by a spring, and may be withdrawn by thumb-piece *l*.

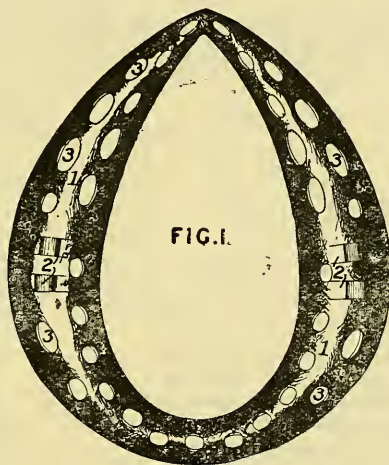


4029. **Okell, R.** Dec. 6. [*Provisional protection only.*]

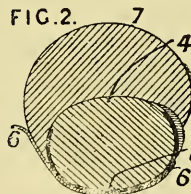
Collars, neck; traces.—Relates to collars, tugs, and trace bearers. The collar is made in two parts, which are fastened together at the top and bottom by means of studs and cross-bars, each pierced with several holes. The collar can thus be made wider or narrower. It may be made of wood strengthened by iron stays which also form the hames, and the frame may be covered with a loose removable

lining. The tug is connected to the trace by "a stud bolted to the iron tug piece;" the stud passes through one of several holes made in the trace, and the fastening is further secured by metal or leather loops. The trace bearer is loose on the trace and secured to it by a bolt which passes through the loop of the bearer and through one of several holes in the trace. This bearer "renders the tug capable of being used for double or single harness." The bolts are each provided with a cottar pin to prevent them from coming out.

4289. **Williams, G. H.** Dec. 31.



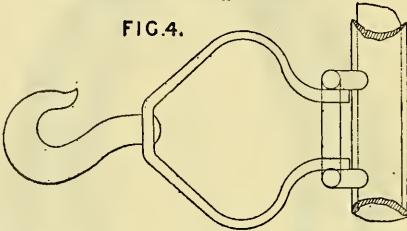
Collars, neck.—Relates to a collar specially adapted for horses or other animals employed in collieries or mines, the top of the collar being of iron and not liable to wear away by contact with the roof. The usual frames and ring are dispensed with and a frame or block 1, of the section shown in Fig. 2, forms the framework to which the draught fittings 2, Fig. 1, are secured. This frame is formed of malleable or wrought iron, or of wood plated with iron or other metal, or is stamped out of thin sheet iron. Webbing 4 is strained round the frame and across the hollowed part and in some cases the hollow is filled with straw or other material. Flannel or other yielding fabric is stitched on the inside of the covered frame, and between the fabric and the frame a thick padding of hair, wool, &c. is placed. The outer or front side of the webbing and frame is covered with leather 6 or other material. Holes 3 are in the frame to lighten it. The frame may be made with a joint at the bottom secured by a screw or bolt.



A.D. 1874.

2. Fowlie, J. F. Jan. 1.

FIG. 4.



Fastening; traces; collars, neck; saddles.—In order to reduce the jerks due to irregular resistance to which horses and other animals are subjected when drawing ploughs, harrows, carts, wagons, and other vehicles, an elastic arrangement consisting of metal, india-rubber, or other springs, &c. is fitted in the traces or chains, or is formed in or attached to the hames or breast band or on the plough. A similar arrangement is fitted to the harness or connections of animals employed for carrying loads. Fig. 1 shows one form of elastic link. One end of a spring *e* bears against the end of a cylindrical casing *a* and the other against a shoulder *c* formed on the end of a rod to which the connecting-links *d* are attached. The links *b* at the other end of the casing may be dispensed with and that end attached by screws or bolts to the vehicle or article to be drawn, or they may be connected to or form part of the hames. When the traces are connected to a hook, a helical or flat spring, or a series of india-rubber or other springs, may be fitted to the hook, or the hook may be made elastic, as shown in Fig. 4. The elastic links in the traces or those attached to the hames and vehicles may be arranged as shown in Fig. 6. Springs *e* are fitted between the end of the link *a* and the cross-piece *c*³ of the hook *c*.

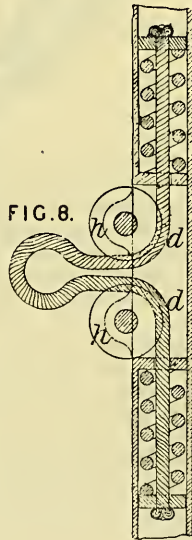


FIG. 8.

The pins *c*³ slide in holes in the end of the link *a*. The springs may be arranged inside a hollow hame, as shown in Fig. 8, the traces being connected to a loop in the wire or other rope or chain *d*. The

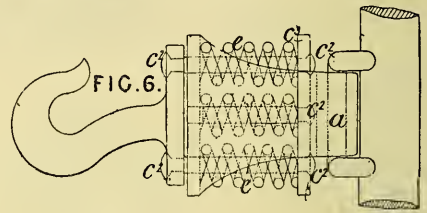


FIG. 6.

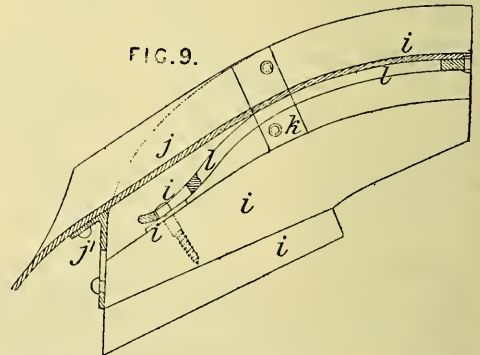


FIG. 9.

rollers *h* round which the rope or chain *d* passes may be dispensed with and a smooth round surface substituted. One or more flat springs may be fitted between the hames and the collar. Fig. 9 shows a section of one half of a pack-saddle. A flat spring *l* is fitted between the channel plate *j* for the back band and the frame *i*. The plate *j* is kept in position by brackets *k* and the end plates *j*¹. Helical springs or india-rubber may be substituted for the flat spring.

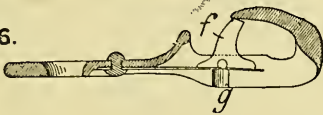
154. Cockings, J. S., [Reynolds, S.]. Jan. 12.

Fastening, hooks for. The spring hook *e*, Fig. 2, is formed with an open part *d* for the application of the thumb to deflect the spring *b*, which is riveted at *c* to the body of the hook. In a modification, the hook is closed by a stop *f*, Fig. 6, riveted to the spring and having projections on each side working in vertical slots *g*. By pressing the stop downwards, a ring or other connection may be inserted. The hook is of malleable cast

iron or other metal, and is cast without the use of cores. The hook is attached to the hames by a loop *a*, or by a circular plate riveted to the hook,

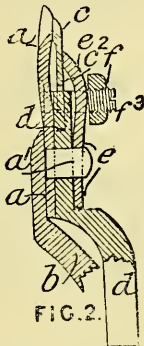
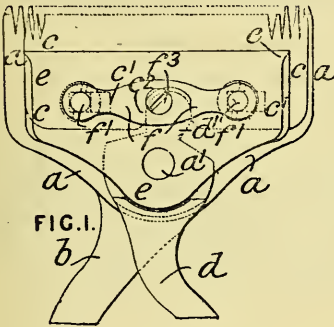


FIG. 6.



or by a buckle. The hook may be formed with a shank for the attachment of a swivel eye.

169. Norman, J. Jan. 13.

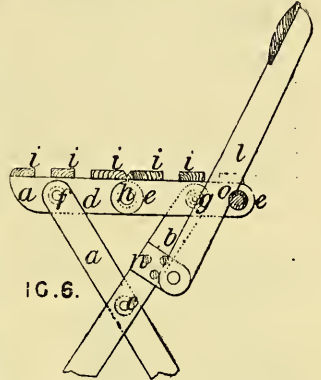


Horse clippers and the like.—Relates to improvements in the clippers described in Specification No. 135, A.D. 1873. The lower comb plate *a* is rigidly secured to the handle *b* and carries the stud *a'*, which acts as a pivot for the movable handle *d*. The movable comb plate *c* has recesses *c'* to receive the guide-pins *f'*, and a recess *c''* to receive the projection *d'* on the lever *d*. To keep the two comb plates in contact, the plate *e* passes over the stud *a'* and bears against the plate *c*; the cross-bar *f* has an adjusting-screw *f'* at its centre to press on the plate *e* and is secured to the lower

plate *a* by means of the guide-pins *f'* on the bar *f*, or by screws screwed into the plate *a*. The handle *b* may be attached to the bar *f* or formed in one piece with it.

405. Goulding, W. Jan. 31.

Stands for.—Relates to a folding chair, seat, or table, applicable, in one modification, as a "saddle airer" or stand. The top is made of links *d* connected at their outer ends to the legs *a*, *b*, by pins *f*, *g*, and at their inner ends by a rod *h* extending from side to side. Slats or rails *i* extend across the frame, to form the top. The two middle rails *i* abut against each other to hold the two parts of the top in an inclined position.

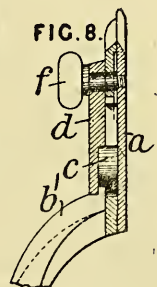
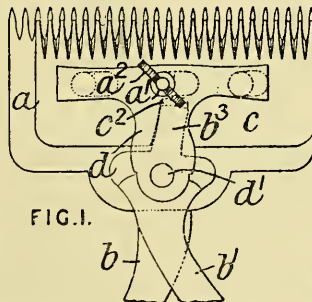


489. More, J. W., and Norman, J. Feb. 6. [Provisional protection only.]

Saddles, harness. The saddle-tree is of metal or metal and wood combined, and has a groove formed in the upper surface in which the backband slides. The flaps are connected to the saddle-tree by staples, which pass through holes in the saddle-tree and flaps and also through holes in metal plates enclosed between the flaps and flap linings or between the flaps and panels. The parts are bound together by nuts screwed on the ends of the staples. The staples also retain the backband in position. The terrets are screwed into holes formed in the centre of the staples. The staples may be dispensed with and the terret plates used to keep the parts together. The saddle-tree may be pin-jointed to the plate so as to admit of adjustment to different horses.

715. Bown, W. Feb. 25.

Horse clippers and the like.—Relates to the construction of horse clippers. The fixed plate *a*, Fig. 1, is attached to the handle *b* and is provided with a series of bevelled slots parallel to the teeth to facilitate the discharge of hair, dirt, &c. from between the plates. The movable plate *c* is operated by means of the projection *b'* on the handle *b* entering a recess *c'* in the plate *c* which is guided by pins on the T-piece *d*. A pin *d'* from the piece *d* acts as a fulcrum for the handle *b*. The stud *a'* and winged nut *a''* are provided to secure the piece *d* to the plate *a* and to regulate



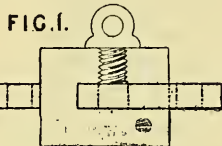
the pressure between the plates *a* and *c*. In a modified arrangement, the handle *b*¹, Fig. 8, is formed with a boss *c* which enters a countersunk recess in the plate *a*, and the plate *d* is held in position by a thumb-screw *f* screwed into the plate *a*.

1048. Clark, A. M., [Bourdais, A.].
March 25.

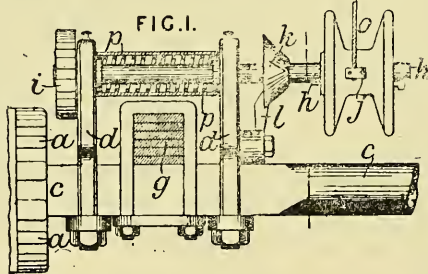
Straps and bands.—Copper, brass, galvanized iron, or other metallic wire is used in making harness straps and other leather articles, instead of the ordinary hemp or other stitching-cord. The stitching-wire may consist of a single wire, or of a cord of several wires twisted together.

1081. Winter, H. March 28. [Provisional protection only.]

Fastening pole chains &c. Relates to a coupling for releasing fallen horses. A link, shown in Fig. 1, consisting of a slide kept in position by a bolt, is fitted in the pole chains or straps. By unscrewing the bolt the slide is released and the horse becomes free of the pole chain or straps.



1110. Clark, A. M., [Jouret, A. J.].
March 30. [Provisional protection only.]



Stopping runaway and restive horses.—The bearings *d* of a shaft *h* carrying a pinion *i*, conical pulley *k*, and drum *j* are mounted upon the axle *c* or spring *g* of a road vehicle. A bell-crank lever *l* having an inclined arm which acts upon the pulley *k* to move the shaft *h* axially is mounted on the frame *d* and is operated by means of a cord attached to its other arm. When the shaft *h* is moved so that the pinion *i* gears with the spur-wheel *a* on the wheel of the vehicle, the cord *o* is wound upon the rotating drum *j* and pulls upon the rings of the bit or upon the noseband, the effect of which is to compel the horse to stop. On releasing the lever *l*, the spring *p* throws the pinion *i* out of gear and the cord *o* may then be unwound by the horse.

1174. Harries, G. E. April 4. [Provisional protection only.]

Horse-boots; interfering-rings and the like.—Relates to a new or improved construction of brushing-boot for horses. The boots or leather shields are made "rights" and "lefts" and they are strapped on the hind legs over the fetlocks to prevent bruising of the leg above the hoof; the inner surface of each boot or shield near the top edge, is provided with a cushion or pad, which has a division or recess formed therein at the point where the boot rests against the hind part of the leg when strapped up. The cushion, resting against the hollow of the leg on each side, will prevent any movement or turning of the boot.

1299. Tongue, J. G., [Curtis, D., and Gilman, H.]. April 15. [Provisional protection only.]

Lining.—Collars, saddles, and other parts of harness are lined with sheet lead to prevent chafing and to heal the flesh when chafed.

1326. Abel, C. D., [Fehrmann, L.]. April 17. [Provisional protection only.]

Traces.—Springs are placed at the ends of the traces attached to the draw-bar to prevent longitudinal shocks. A metal tube, hooked to the vehicle, contains a piston and rod which compress a piece of caoutchouc tubing or a steel spring. The piston-rod passes through the cover of the tube and is secured to the traces.

1582. Jones, T. O. May 5.

Whips.—The handles of riding-whips, particularly for ladies, are made of cut or blown glass, and in all colours; they may be solid, or they may have in the top a receptacle fitted with a stopper, so as to form a scent bottle.

1609. Courtois, C. May 7.

Horse clippers and the like.—For clipping or shearing animals, especially sheep, the instrument consists of a central fixed blade *b*¹, Figs. 1 and 3, and four movable blades *b*, *c* actuated by a bow spring *e* fitted with handles *f*. The outer blades *b* are pivoted on pins *i* and are provided with pins *g* which engage with projections *c*¹ on the blades *c* and with slots formed in spring plates *d* covering the lower part of the blades. The blades are separated for sharpening by raising the

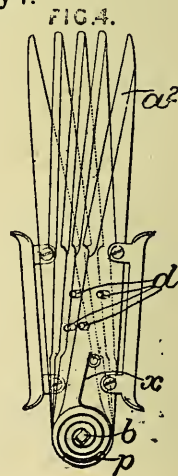
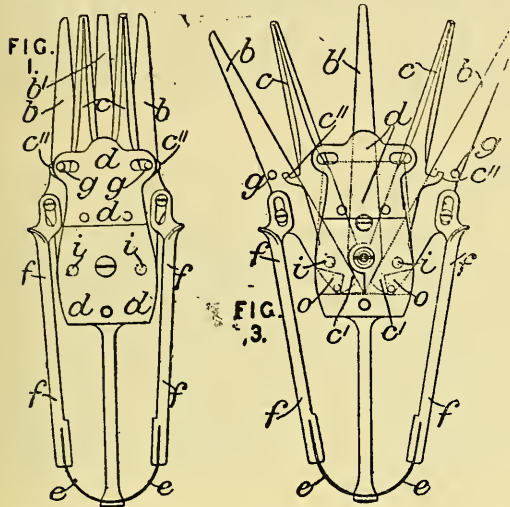
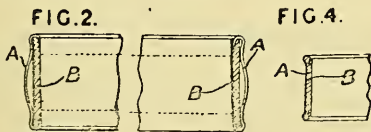


plate *d* until the pins *g* are disengaged; the spring *e* then causes the blades to assume the positions shown in Fig. 3. The blades *c* are held on one side by projections *c'*, while the two blades *b* are



held by pins *o*. The shears may be taken to pieces for grinding by removing the plate *d*. In the arrangement shown in Fig. 4, five blades are mounted on a single pivot *b* and are connected by pins and slots. The blades are kept in the open position by a spiral spring *x*, and are separated for sharpening by raising each blade until the pins *d* are disengaged from the slots. A pin *p* enters a groove in the blade *a*² and prevents the blades from being opened too far; in some cases this pin may be omitted. The blades may be constructed of a single blade of steel, or the cutting-parts may be attached by screws.

1788. Lake, W. R., [Mersereau, W. T.]. May 20.

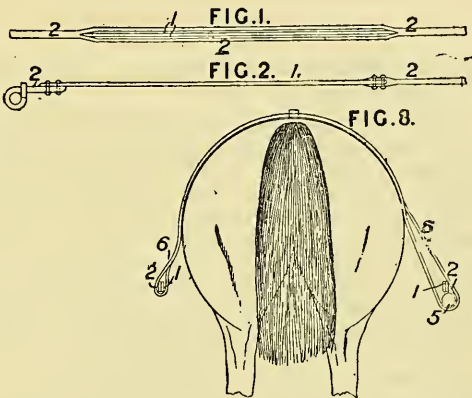


Dog collars.—The outer part of the collar is formed by a strip *A*, Fig. 2, of brass or other metal, having the edges turned over to receive a strip *B* of leather. Chafing of the neck is prevented by a lining of cloth or the like stitched to the leather and extending the width of the metal strip. In a modification, the edges of the leather are split to receive the edges of the metal strip, as shown in Fig. 4, thus preventing contact of the metal part with the neck.

1954. Lyon, W. P. June 5.

Clothing for animals.—Relates to a method of applying magnetism to animals by means of magnetic fabrics, for curative and other purposes. Woollen, cotton, linen, silk, felt, or other fabrics, alone or in combination, are woven with short magnetized tubes, wires, or beads of steel or other metal, the tubes &c. being of any suitable form, length, and thickness, and magnetized either before or after being made up into the fabrics.

2012. Singer, I. M. June 10.

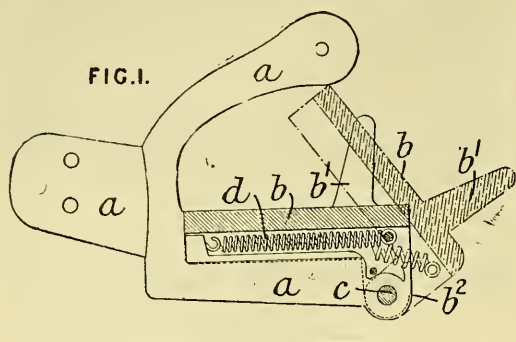


Traces; breeching.—Relates to harness for horses mules, or other animals, and consists in arrangements for preventing kicking. A strap *1* made of one or more pieces of spring steel is combined with each trace *2* as shown in Fig. 1, either by sewing it inside the leathers of the trace, or by metallic or leather keepers, screws, studs, or other means. Or the steel straps *1* having leather ends *2* riveted to them may be used instead of leather traces as shown in Fig. 2; or steel straps connected to the splinter-bar and hame tugs may be used. Or the strap and the trace may be enclosed in a flat or other shaped tube. In single harness the hip strap or trace bearer *6* is passed through a loop in the back band or crupper strap in a line with the hip bones across the horse, and is connected to both traces; in double harness it is buckled on the outer trace and to the pole *5*, as shown in Fig. 8.

2043. Billings, G. K. June 12.

Stirrup straps, suspending, safety saddle-bars for. Stirrups are constructed so that they will yield to a lateral drag of the stirrup leather should the rider become unseated with his foot caught in the stirrup. The stirrup leather rests on a saddle-piece *b* which is fitted with an upward projection *b'* and pivoted to the stirrup bar *a*, at *c*, by means of downwardly-projecting ears *b''*. A spring *d* normally holds the saddle-piece *b* in position, but,

in case of a lateral drag, the spring yields and the saddle-piece is tilted to release the stirrup strap.



2114. Holland, A. June 17. [*Provisional protection only.*]

Horse clippers and the like.—To prevent friction in shearing and clipping apparatus, a pair of small rollers are mounted in slots in the cap; the rollers project sufficiently to touch the face of the top cutting-plate, and they rotate with the to-and-fro action of the top cutting plate and cap. Or loose rollers or shots may be set in countersunk grooves in the cap and top plate. There may also be side friction-rollers held in the usual stops of the cap. The apparatus is secured and set up by a movable screw pin with a thumb-piece for adjustment; the pin passes through all the parts and is arranged near the top of the cap centrally between the two rollers. The shaft of the handle and the cap are preferably made in one piece, to which the lever is secured by a countersunk screw passing through both parts and fastened permanently by a slot, burr, or nut upon the top.

2157. Colverd, J. June 22. [*Provisional protection only.*]

Fastening pole chains and straps. The head of the pole of a pair-horse carriage consists of a central piece and of two outer pieces of steel, iron, &c., to which the pole pieces are attached. A pin upon each of the side pieces fits into a socket in the pole, and a sliding collar is then screwed upon raised collars on the side pieces and upon iron plates fixed upon the top and bottom of the central piece, so that the side pieces are firmly attached to the pole. The pole hook is formed upon either the top or the bottom plate of the pole. On unscrewing the sliding collar, the side pieces may be detached to release the heads of both horses simultaneously. The collar is prevented from sliding down the pole, when unscrewed, by a small stud on the pole.

2218. Mohr, C., and Shammon, W. June 26. [*Provisional protection only.*]

Muzzles for animals.—In constructing wire muzzles for dogs and other animals, the wires are

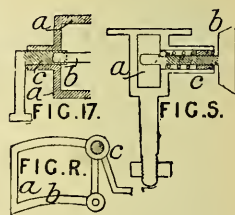
recessed at their points of junction, or where they cross each other, so that they may fit together or lie evenly and only present the thickness of a single wire. Where two wires cross or join they are folded or clipped within a cross-shaped piece of thin sheet metal, the whole joint being soldered if desired. In the case of three or more wires, the grooves or recesses are cut at the requisite angle and the thin metal clip is formed with two points for each wire.

2236. Martin, A. June 27. [*Provisional protection only.*]

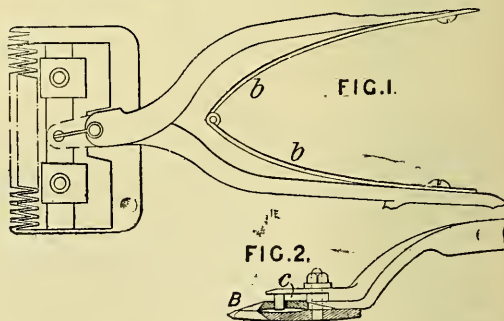
Horse clippers and the like.—Relates to apparatus for clipping and shearing horses, sheep, and other animals, in which cutters having comb-like teeth slide one over the other. The teeth in one of the cutter plates are cut deep so as to have considerable elasticity and to extend back considerably beyond the roots of the teeth of the other cutter plate. A cover plate is used to keep these teeth in working contact with the teeth of the other cutter plate, and the edge of the plate is caused to press upon the teeth at some distance from their roots.

2290. Scott, U. July 1.

Fastening traces. A screw buckle, shown in Fig. 17, is used for holding the traces as shown in Figs. R and S. The tongue *b*, Fig. 17, is secured by a screw *c* in a buckle frame *a*. The trace buckle *a*, Fig. R, is fitted with a tongue *b* and a lock *c* and with a handle which is turned to release the buckle and trace from the roller beds. Fig. S shows how a roller bolt may be used without a trace buckle. The trace is passed through the space *a* and is held by a bolt *c* on a handle *b*, which is also used to secure and release the shaft.



2373. Clark, W. July 7.



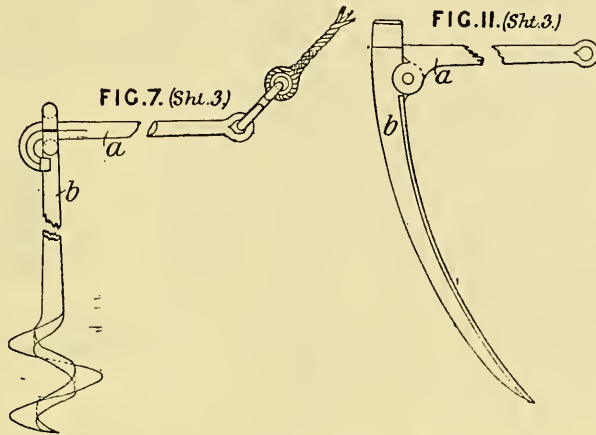
Horse clippers and the like.—The handles of the clippers described in Specification No. 1228, A.D. 1873, are forced apart by springs *b*, Fig. 1,

the upper ends of which are hinged together, while the lower ends are adjustably connected to the handles. In another arrangement, bow springs are employed. The short lever *c*, Fig. 2, for operating the cutter plate *B* is formed as a spring lever

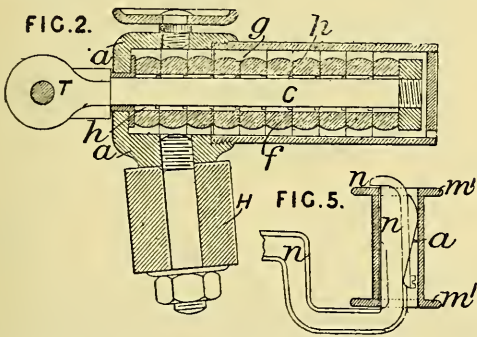
to enable the cutter plate to yield when grit or stones get between the teeth.* For the same purpose a spring or cushion may be placed in the recess of the cutter plate, between the edges and the stud by which it is actuated.

2484. Turner, G.
July 16.

Tethering animals.—Pegs for attaching lines for picketing horses, of the kind described in Specification No. 1367, A.D. 1871, are provided with eye-bars *a* which fold against the shank *b* during transport. The shank *b* is screwed or fitted with a barb, or is formed of curved angle-iron as shown in Fig. 11.

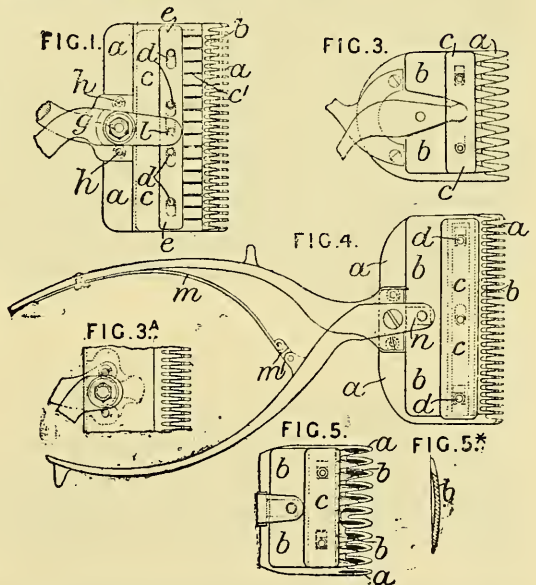


2505. Abel, C. D., [Fehrmann, L.]. July 17.



Fastening.—Draw-springs are interposed between the splinter-bar or whipple-tree and the trace fastening, which may be arranged so that the horse, on becoming restive, may release itself or be released by the driver. A caoutchouc tube or a number of caoutchouc washers *g*, Fig. 2, is placed round the rod *C*, which, under the pull of the horse, slides in the casing *a* on the splinter-bar *H* and compresses the tube or washers. Metal or leather washers *f*, with rims *h*, are placed between the washers *g*. The casing *a* may be attached by a loop to the whipple-trees, and the trace may be attached to the rod *C* by a hook, or by a pin *T*, or by a roller-bolt *m*, Fig. 5, upon a hook *n*. The socket *m* is held upon the hook *n* by a shoulder at the end of the hook and by a spring *a*, and is removed by the driver pulling a cord attached to it, or by hand. In a modification, the shoulder on the hook *n* is omitted, so that a kicking horse may release itself.

2538. Martin, A. July 20.



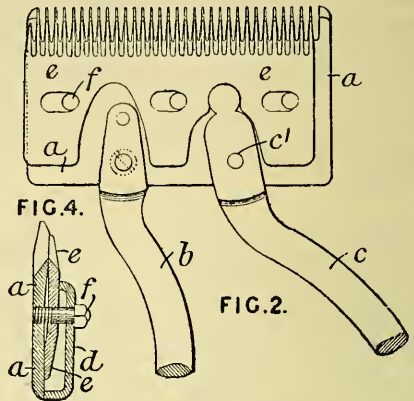
Horse clippers and the like.—In the clipper or shearer described in Specification No. 2236, A.D. 1874, instead of making the cover plate with a straight edge bearing on all the teeth of the upper cutter plate, it is made with a number of slots *c*, Fig. 1, so as to form numerous springs, each bearing on one or more teeth of the cutter *b*, or, in place of the cover plate bearing directly on the cutter, a strip of leather, rubber, or the like with a strip of metal between it and the cutter may be interposed.

The cover plate *c* may be bent down at its rear edge to bear on the lower cutter plate *a*, and may be held in place by screws *d*, passing through the lower cutter and slots in the upper cutter, and screwed into the cover plate or into a bar *e* above it. The heads of the screws *d* are countersunk or let-into the underside of the plate *a*. The upper cutter has fixed to it a pin *l* which passes up through slots in the plate *c* and bar *e* and enters a hole in the end of the upper lever handle. The lower lever handle is secured to the plate *a* by screws *h*, and the upper handle turns on a pin *g* secured to the lower handle. In a modification shown in Fig. 3, the lower handle is forked, and the upper handle is pivoted directly to the bottom plate. In another modification, shown in Fig. 3^a, the handle portion of the upper levers has a square hole fitting a square part on a spindle which is pivoted in the lower cutter and the cover plate and carries an actuating-arm. In another modification, shown in Fig. 4, a pin on the end of the movable handle enters a block *n* which works in a recess in the cutter *b*. The pins *d* are also provided with square blocks for the cutter to work upon. The handles are formed so that they can be grasped in one hand; they are pressed open by a spring *m* screwed to one handle and connected to the other by a short link *m*¹. The handles may also be formed with eyes like scissor handles. In clippers for shearing sheep, the teeth of the lower cutter are preferably made wide and blunt at the points, and the upper cutter may have two teeth to each tooth of the lower cutter, or be constructed as shown in Fig. 5 so that it is traversed to such an extent only that its teeth move from over the side edge of one tooth of the lower cutter to over the side edge of the next tooth, the upper surface of each tooth of the bottom cutter being hollowed out at the centre. The under edges of the teeth of the bottom cutter are bevelled off near the points, so that the wool may be gathered more easily between the points. The upper cutter is of curved form as shown in Fig. 5^x, and the rear portions of its teeth are ground away underneath, so that only the front portions act as cutters.

2635. Martin, R. July 28.

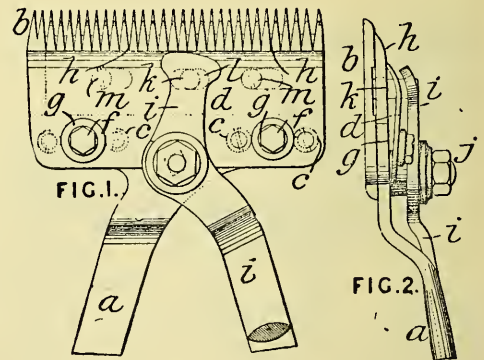
Horse clippers and the like.—The lower plate *a*, Figs. 2 and 4, carries the fixed handles *b*; the movable plate is guided by screws *f* which also adjust the pressure of the cover *d*, and the plate is operated by the handle *c* pivoted on studs *c*¹ which

enter holes in the plates *a*, *c*. Two openings are formed in the plate *e*, as shown, to receive the



handles, the screw of the fixed handle passing through the cover plate, to hold it in position.

2764. Couhault, M. J. B. Aug. 10.



Horse clippers and the like.—The fixed arm *a*, Figs. 1 and 2, is provided with a head to which the comb *b* is attached by screws *c*, and to which the pressure plate *d* is also attached by adjusting-screws *f* and nuts *g*. The movable comb *h* is operated by the stud *k* passing through the slot *l* in the plate *d* and attached to the short arm *i* of the movable handle, which is pivoted on the stud *j* carried by the arm *a*. Stud *m* in the fixed comb work in slots in the movable comb, to serve as guides.

2923. Carter, J. Aug. 26. [Provisional protection only.]

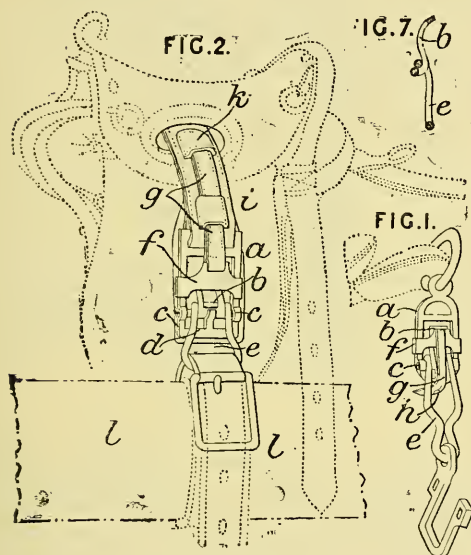
Fastening traces. Relates to means for attaching harness traces to vehicles so that they may be readily detached for releasing a fallen horse &c. The eye or loop of the trace is made of metal covered with leather, and it is divided into two parts which are hinged together by a knuckle joint.

The two parts of the eye may be rigidly connected together by a spring latch or bolt carrying a knob or handle and taking into a catch or socket. To attach the eye of the trace to the roller-bolt of the vehicle, the latch is withdrawn from the catch by means of a knob, and the eye is opened to allow of its being passed around the roller-bolt, when it is snapped to. To release the eye, the latch is withdrawn.

3024. Bossert, A., [*Holder, P., and Stolz, A.*] Sept. 3. [*Provisional protection only.*]

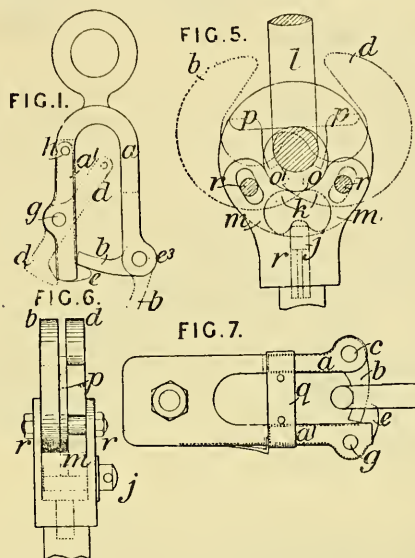
Horse clippers and the like.—In an apparatus for shearing sheep and other animals a comb plate is mounted upon one of a pair of shear arms, and upon the other is mounted a two-edged knife which "receives its pressure and movement upon the comb by the bill or point of a superposed "spring" regulated by a finger screw. The correct movement of one arm upon another is secured by a bridge-piece resting on two collars on the comb arm or by a groove in the shear arm.

3050. Clayton, F., [*Owen, A. G.*] Sept. 5.



Fastening.—Relates to a fastening for securing the backband to the shaft, and for the traces. The frame *a*, Fig. 2, supports the tongue *b*, Figs. 2 and 7, on pivots *c*, a strengthening-bearing *d* being provided. The link *e*, from the strap passing round the shaft *l*, is passed over the tongue *b*, and the tongue is secured in position by means of the slide *f* and a strap *g* passing through the keeper *i* and into the pocket *k* on the backband. To release the fastening the strap *g* is withdrawn from the pocket and keeper and the slide *f* raised. For chain attachments, the strap *g*, Fig. 1, is buttoned over a stud *h* at the bottom of the frame *a*.

in the closed position by the nose *e* of the lever *d*, which is released, when necessary, by withdrawing a pin *h*. This form of hook may be used in the inverted position, the lever *b* being then continued



beyond the pivot *e* and provided with a counterpoise which throws the hook open when the pin *h* is withdrawn. In a third form, the points of the levers *b*, *d*, Figs. 5 and 6, are arranged to cross one another when the hook is closed; the curved inner parts *k*, Fig. 5, of the levers project when the hook is open, so that the staple *l* &c. presses upon them and turns the levers on their pivots *r* to close the hook; a spring or bolt *j* then engages in slots *o* to hold it closed. Tumbler plates *m* with projecting flanges *p* are fitted in the casing of the hook, so that in the case of "a vehicle taking beyond a fixed amount of side motion," the pressure of the tumblers against the spring opens the hook.

3329. Clay, J. Sept. 29. [*Provisional protection only.*]

Saddles are made adjustable so as to fit animals having backs of different sizes and figures. The front and back parts of the saddle-tree are made of metal and are arch-shaped. Each part consists of a middle curved plate shaped to fit the animal's back, and two pivoted outer curved plates capable of being fixed in different positions on the middle plate. The lower ends of the outer plates carry the wooden bars which form the bearings of the saddle. The seat of the saddle is secured to the middle plates. The outer plates turn on bolts on the middle plates, and their inner ends are angularly recessed to engage angular key pieces which are bolted to the middle plates and serve to fix the outer pivoted plates in the different positions. Three or more angular key pieces are provided for each arched part, each differing in width, so that the distance between the ends of the outer

3301. Rogers, J. B. Sept. 26.

Fastening traces &c. A slip-hook for use in fastening harness traces &c. is constructed with two levers *b*, *e*, Fig. 7, which are attached by pivots *c*, *g* to the slotted legs *a*, *a'* of the hook. The levers are supported in the closed position by a strap *g*, which slides upon the legs. In another form of the hook, the lever *b*, Fig. 1, is supported

plates can be varied. Several adjustments of the saddle can thus be made, whilst the seat is not changed by such adjustments.

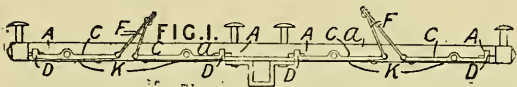
3512. Garnett, W. Oct. 13. [*Provisional protection only.*]

Saddles.—Military and other saddles are made adjustable to suit the size and shape of the horse's withers and back. An inner frame, which can be adjusted to a greater or less distance from the saddle, is attached to the underside of the saddle-tree by means of box screws or pins screwed on their upper ends and passing through holes in the saddle-tree. This frame consists of two parts symmetrically arranged on opposite sides of the tree; each part is composed of a longitudinal piece, "which follows the general figure of the "bearing bar" of the tree and of a cross-bar, at its front end, "which follows the general figure of "a portion of the front arch of the saddle-tree." The screws or pins are provided with nuts, by which the frame can be moved nearer to or farther from the underside of the tree.

3526. Burch, W., and Thom, A. Oct. 14. [*Provisional protection only.*]

Saddles.—The saddle-trees are made adjustable to the withers and backs of horses of various sizes. The fore arch and the cantle are each composed of two pivoted curved metal arms, the lower ends of which are secured to side bars, while the upper ends are formed in the shape of jaws, to embrace partially small rollers lying longitudinally in cups, held in position by pins. The rollers are vertically bored and tapped, and adjusting-screws are passed through them. The upper ends of the screws project and are shaped to fit a key. When the key is operated, the rollers are worked up or down in the cups, and exert a pressure on the upper or lower lips of the jaws, drawing the side bars towards each other, or forcing them apart sufficiently to fit the withers and back of the horse. The seat is secured at the front to the arms of the fore arch and at the back to a curved plate placed immediately in front of the cantle, and is only very slightly affected by the expansion or contraction of the tree.

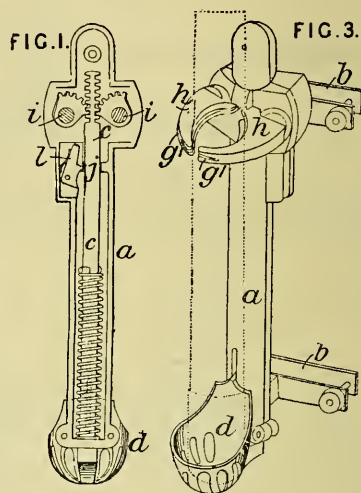
3929. Staker, C. Nov. 14.



Runaway horses, releasing.—When a vehicle is drawn by two horses, the traces are formed at their ends with flat metallic pieces which pass through slots A in the splinter-bar *a* and are held by bolts D on the ends of spring levers C, which are all connected by rods F to a rein. On pulling

this rein, the levers C are turned back against the springs K and the bolts D are withdrawn from the holes in the metallic attachments on the traces, thus releasing the horses. The crab is loose on the head of the pole and slips off when the traces are released. When there is one horse only, the ends of the shafts are attached to the vehicle by bolts which may be slipped as above to release the horse.

4003. Knibbs, F. E. Nov. 21.

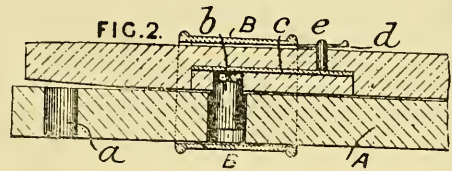


Whip-sockets.—The lower end of the whip is placed in a cup *d*, Fig. 3, the depression of which causes the jaws *h* to open and allow the whip to be inserted. The cup *d*, Fig. 1, is connected to the rod *c* in the interior of the case *a*, and the depression of the rod *c* rotates the spindles *i*, upon which the jaws are mounted at a slight inclination to each other. The spring pawl *l*, which engages with the teeth *j* so as to prevent the spindle *c* from moving up or down, is released by a key passed through a slit in the case *a*. The grooves *g*¹, Fig. 3, in the jaws *h* may be fitted with an elastic material, and the case *a* is attached to the splashboard or other part of the vehicle by clips *b*.

4099. Sampson, G. D. Nov. 30.

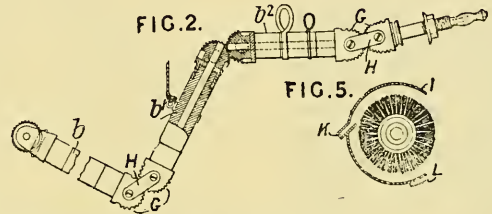
Fastening.—In a fastening for securing the straps, traces, and backbands of harness, a pin *b*, Fig. 2, formed on one side of a plate *c* embedded in a strap, engages with one of a series of holes *a* in another strap A, and, to prevent unfastening, a metal, leather, wood, or other loop B provided with a spring or catch *d* is drawn over the straps so as to encircle them until the spring *d* springs over a pin *e* carried by the plate *c*. The pin *e* may be carried by the spring *d* so as to engage with a series of holes in either of the straps. More than

one pin *b* may be used, and the pins may be riveted &c. to the strap. A second loop, preferably of leather, may be employed on the hame tug for confining the point of the trace, and an additional sliding loop, made of leather attached to a leather support, is employed above the metal loop on the shaft tug, so that the trace has a tendency to draw the leather loop towards and in contact with the metal loop.



4159. Small, J. H. Dec. 3.

Brushing-apparatus for grooming; combs; horse clippers and the like.—A flexible shaft for driving a combined brushing, combing, and clipping machine, similar to the brushing-machine described in Specification No. 27, A.D. 1873, consists of a series of short shafts working in sleeves *b*, *b*¹, *b*² and united by universal joints consisting of two hemispheres provided with rows of teeth, the number in each row diminishing towards the axis. The hemispheres are kept in contact by toothed segments *G* attached to collars on the sleeves *b*, *b*¹, *b*² and united by links *H* pivoted at the centre of each segment. One end of the flexible shaft is connected to the driving-shaft by a universal joint, while the other end is formed to receive the brush, cloth, rubber, sponge, or the like, or a shearing or cutting device. The brush is provided with a shield *I*, Fig. 5, having an opening *K* at the back to which a flexible tube or



pipe may be attached for conveying away the dust &c. The tube may lead to a covered box or bin in the stable, or to an exhausting-fan which discharges the dust outside the stable. The shield may also be provided with a currycomb *L* or other comb for removing mud &c.

4249. Pyne, R. W. M. Dec. 10.

Whips.—A riding-whip is constructed so as to be convertible into an umbrella or sunshade. A tubular stick contains two sliding tubes, to the larger of which are attached the stretchers, and to the smaller the ferrule connected to the ribs by “hinges on a hoop or ring.” The ribs lie side by side and enclose the whole cover, thus preventing any rubbing against the inside of the outer tube. When it is required to convert the whip into a parasol or sunshade, the handle or knob is unscrewed and applied to the other end. The ribs are then drawn from the tube, and, the ferrule being arrested at the end of the tube by a shoulder, are turned over on the hinges, with the assistance of a spiral spring enclosed in the tubular end of the stick and a telescopic action near the ferrule. They are then drawn downwards by the tube to which the stretchers are attached, and by another telescopic action between the joints and the tops of the ribs. The ribs “become elongated so as to expand the silk” when the article is opened.

of an adhesive material to the inner surface of a concave or flat disc of glass, mica, gelatine, or other transparent material, so that the photograph &c. is visible through the glass. The back is filled in with mastic, or a bituminous or other cement, or resin of any colour, and a metal back having a shank, pin, or other means of attachment is then fixed to the mastic &c.

4370. Brown, M. H. Dec. 18. [Provisional protection only.]

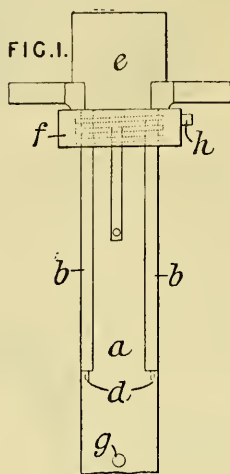
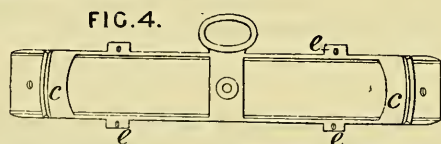
Nosebags are suspended so that they will rise when the horse's head is lowered and fall when the horse's head is raised. The parts employed for suspension are connected to the bottom of the bag, and a grooved pulley is placed behind each of the rosettes of the head gear. A light cord or strap of round leather is passed over the pulleys, and through the rein rings fixed on the collar, the loop of the cord or strap being passed over the hook of the saddle. Each end of the cord or strap “is connected to the upper ends of the suspending pieces fixed to the bottom of the bag,” and the part which passes over the hook is made elastic or with a spring or springs, to enable the movement of the horse's head to lengthen and shorten it. The suspending-appliance may be applied to an ordinary nosebag.

4356. Clark, A. M., [Ulmann, G. H.] Dec. 17. [Provisional protection only.]

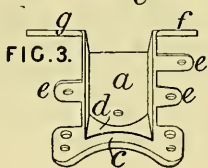
Whips.—Relates to a method of manufacturing ornamental buttons, applicable also to the manufacture of the knobs of riding-whips. A photograph or an engraving on paper is fixed by means

4397. Colverd, J. Dec. 21.

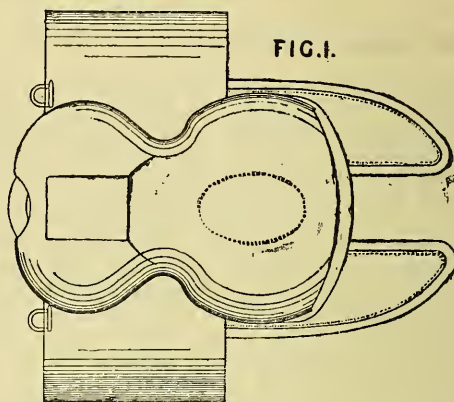
Fastening pole chains and straps. The head of a carriage pole *a* consists of a central piece *e* and two side pieces *b*. The side pieces *b* are of steel &c. and carry the pole pieces, while the central piece *e* has attached, at top and bottom, metal plates one of which carries the pole hook. A sliding collar *f* engages upon a screw cut on a raised collar on the side pieces *b* and the metal plates of the central piece *e*, and can be fixed in position by means of a thumb-screw *h* or spring. Pins on the back ends of the pieces *b* engage in holes *d* in the pole *a* to hold the pieces *b* in place, and a pin *g* prevents the collar *f*, when unscrewed to release the pieces *b*, from slipping down the pole.

**4438. Cox, W.** Dec. 24.

Saddles.—The trees of a harness saddle are of cast or wrought iron or other metal, and are formed in one piece with a trough *a* for the backband, which passes through openings *d* between



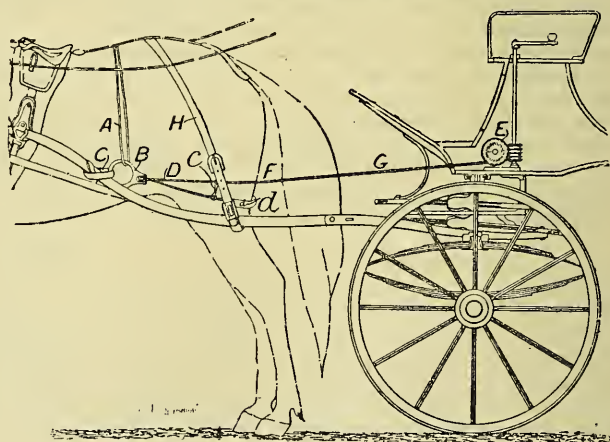
the ends of the tree and the transverse bars *c*. Side plates *e*, *f*, *g* are provided for the attachment of the leather. Draught saddles are formed in a similar manner with side plates *e*, Fig. 4, for the attachment of the leather and the terrets and with an eye for the attachment of the crupper strap. In this case the backband passes under bars *c* near the ends.

4444. Wilton, H. S. Dec. 24.

Saddles.—To prevent injury to a rider when thrown forwards on to the pommel of a saddle, the front or rising portion of the seat is cut away as shown in plan in Fig. 1. The seat is supported by straps fixed to the cantle and the underside of the seat and tightened over the pommel. The panels are lined with rubber sponge covered with linen, the lower part being covered with leather to prevent friction on the sides of the horse. A girth composed of two or more leather straps is used, the separate straps being held apart by means of cross-pieces or separators of steel or the like covered with leather. An opening may be made in the centre of the seat for riders suffering from piles or rupture. When applied to a hunting-saddle, an elastic cushion is inserted in the opening in the pommel. The saddle is stated to allow of ventilation to the back of the horse.

4492. Johnson, J. H., [Lamarque, B., and Bories, J. A.] Dec. 31.

Stopping and controlling runaway and restive horses.—In single harness, a strap *A* passing over the back of the horse carries at each end a pulley ring *B* strapped to the shafts by straps *C*. Round the pulleys is passed a cord *D* which bears against the hind part of the horse and forms the breeching strap at the part *d*, where it is padded and lined with leather. The ends of the cord are connected behind the horse into an eye or loop *F*, which is hooked to a cord or band *G* wound on the barrel of a windlass *E* placed under the seat of the



vehicle. The kicking-strap H is provided with two rings or loops c, which support the cord or band on each side "on a level with the stifle joint." When the cord G is wound on the drum, the cord D acts against and paralyzes the posterior parts of the horse. In double harness, a pulley fixed to each trace is

substituted for the pulley ring. The kicking-strap "is V-shaped; it is buckled at its rear part "behind the sacrum, and the lower extremities are "united to buckles placed for the purpose at the "outer parts of the fore carriage or at the pole." It is also provided with guiding or supporting rings or loops for the cord D.

A.D. 1875.

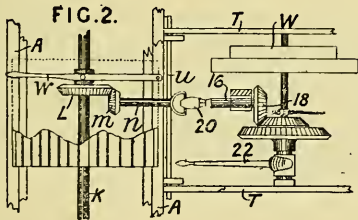
277. Howard, J., and Cox, W. Jan. 25. [Provisional protection only.]

Saddles, girths for. A saddle-girth tightener, which keeps the girth at all times tight to the horse's belly, is attached to the strap end of the girth; it consists of a small metallic box enclosing two, three, or more longitudinal metal rods encircled by helical springs, which tend to tighten the girth.

394. Beck, W. H., [Steinbach & Co., A.]. Feb. 3. [Provisional protection only.]

Saddles, fastening.—To maintain the tension of saddle girths automatically, a series of springs are inserted in the girth, the range of the springs being limited by means of stops. To fasten the girth, and at the same time allow it to be automatically tightened, a pawl and ratchet plate are employed.

416. Chaquette, E. Feb. 4.



Animals, stocks for holding. — Relates to stocks for holding sheep while being sheared. The stocks and the shearing-machine are mounted on separate frames A, T, Fig. 1, connected by a bolt u,

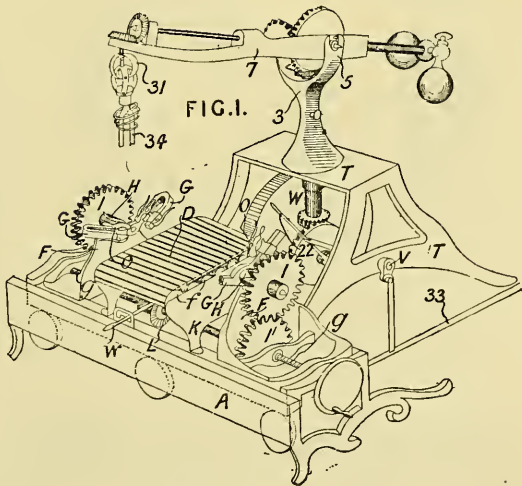
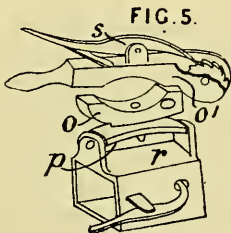


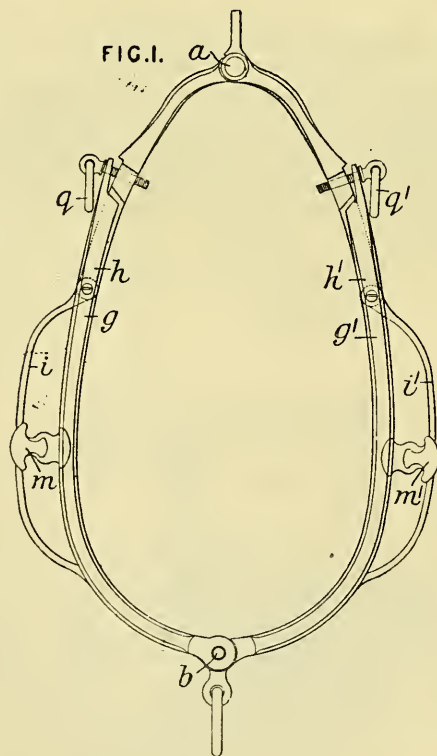
Fig. 2, so that they can be separated for convenience of transport. The sheep is laid upon an endless slat belt D, Fig. 1, supported by rollers *f*. This belt receives and carries away the fleece as it is cut. The sheep's legs are held in clamps *o* on arms G carried by shafts H connected by gear-wheels I, I' with a hollow shaft K. This shaft can be put in gear with the main shaft V of the machine by means of a lever *w* which pushes a bevel-wheel I on the shaft K into gear with a pinion *m* which is driven from the shaft V through bevel gear 18, a shaft 16, a universal joint 20, and a shaft *n*, so as to turn the sheep

slowly as the shearing proceeds. The stocks and the gearing I, I' are carried by brackets F, F, which can be adjusted towards or away from one another by a right and left handed screw *g* passing through the hollow shaft K. The arms G at one end are bent over so as to make room for the sheep's head. Each of the leg clamps consists, as shown in Fig. 5, of a jaw *o'* pivoted to a jaw *o* which can swivel on a plate *p* journalled in brackets on a box *r* adjustable on the arms G. The jaw *o'* is provided with a locking-pawl *s* engaging ratchet teeth on the jaw *o*. The jaws are lined with sheepskin.

421. Adie, P. Feb. 4. [*Provisional protection only.*]

Horse clippers and the like.—The strain on the screws holding together the plates of the clippers described in Specification No. 2796, A.D. 1866, is relieved by a stud fixed to one plate and entering a slot in the other.

438. Dufrené, H. A., [*Dauner, J. L.*]. Feb. 5.



Collars, neck.—Collars are made adaptable to horses of different sizes by constructing the frame or bow in four parts, hinged together at *a*, *h*, *h'*,

and closed by a pin *b*. The parts *g*, *g'* are extended above the joints *h*, *h'*, and adjusting-screws *q*, *q'* are fitted. Side pieces *i*, *i'*, hinged to the joints of the frame, carry the draw-hooks *m*, *m'*. The frame is preferably of iron, but may be of steel, leather, or brass, and is made light by employing the iron flatwise, or by covering the face of the bow with "a kind of planking" before stuffing.

451. Boucley, P. Feb. 6.

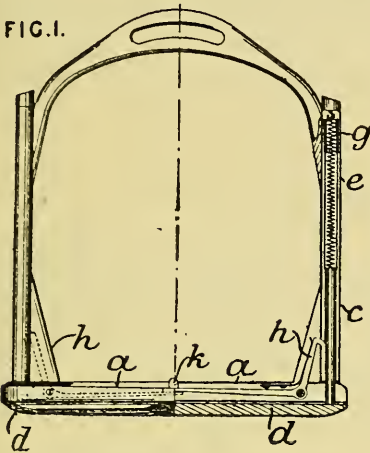
Materials; straps and bands.—Harness straps and bands are formed by impregnating a number of parallel threads, preferably of vegetable fibre, with caoutchouc, gutta-percha, boiled oils, or other glutinous or waterproofing materials, the object being to arrange the threads so that they offer a maximum resistance to tension and do not tend to change their positions. The threads are drawn off from bobbins or a warp beam and are passed through a reed, thence under a spout from which the viscous waterproofing-solution flows, an even distribution being effected by a knife. The threads are finally wound on a reel or beam, transverse bars arranged between the coils forming air spaces to facilitate drying. The solution may be charged with sulphur, sulphides, or other vulcanizing-agents, and with colouring-matter when desired. After passing through the reed, the warp threads may be taken between calender rolls to be impregnated. In making straps, several layers of the waterproof threads may be superposed, an intermediate strip being placed with the threads running crosswise. The whole may be covered with caoutchouc fabric.

509. Hutchinson, W. N. Feb. 11.

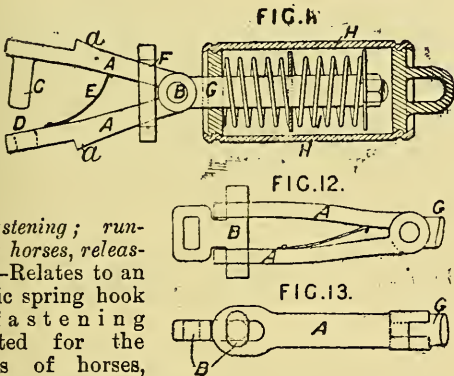
Stirrups.—To facilitate mounting, the stirrup is provided with hollow side pieces and an additional footplate *d*, suspended by springs *e* and capable of being drawn downwards and retained in the extended position by spring catches *h* engaging the edge of a collar *g* on the side legs *c*. The spring is released, and the footplate raised, by pressing on a stud *k* in the fixed footplate *a*.

(For Figure see next page.)

509.



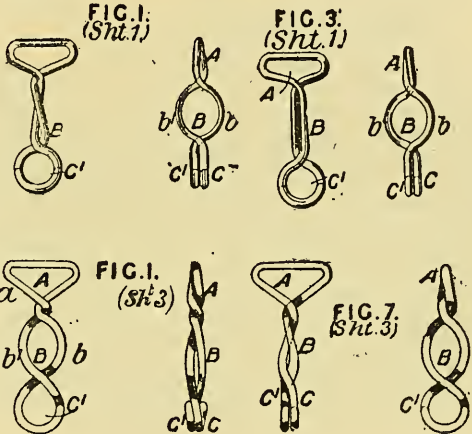
618. Schwanck, C. F. Feb. 20.



Fastening; runaway horses, releasing.—Relates to an elastic spring hook or fastening adapted for the traces of horses, and for other purposes. When the fastening is applied to traces or pole chains, sudden jerks or strains are eased or modified and the traces may be freed at any moment to release runaway or fallen horses &c. Fig. 1 shows one form of fastening consisting of two jaws A pin-jointed together at one end; the upper jaw carries a pin C near the outer end, and the lower jaw has an eye into which the pin can enter. Between the jaws there is a blade or other spring E having a tendency to force the jaws asunder. On each jaw there is a shoulder a and, to close the jaws, a link F is drawn forwards past the shoulders, thereby causing the pin to enter the eye, while the action of the spring prevents the link from returning. To open the jaws, they are pressed towards each other, when the link can be slipped back. Attached to or forming part of the fastening is a shank G which passes into and through a case H containing one or more coiled rubber or other springs I, which always tend to draw the shank inwards. An eye is formed on the back end of the case. For one-horse carriages the cases are made with flanges for attachment to the shafts, and for pair-horse carriages they are

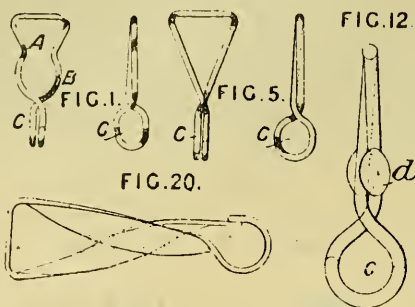
provided with collars having screws for attachment to the splinter-bar. The link F may be dispensed with and the pin C split and provided with projections or latches. Or the jaws A, Figs. 12 and 13, may be slotted to fit over the cross ends or elongated heads of a separate locking-piece B having an eye to which the trace &c. is attached; the locking-piece is rotated through a quarter of a revolution to cause the heads to lie across the slots in the jaws, as shown.

765. Johnson, J. H., [Nye, F. C.] March 2.



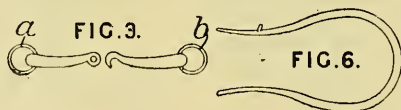
Fastening.—Snap-hooks for connecting the traces of harness with the ring of the whipple-tree &c. are made of one piece of wire or other flexible and elastic material, bent into a loop A, sides B, and two hooks C, C'. Each side or arm has between the loop and the hooks a convex bend b, b', forming a swell. The closed part of each hook covers the open part of the other, making a closed eye. The arms may be locked together by a double crossing, or simply crossed once, on one or both sides of the swell. The hooks are opened by compressing the two bends of the swell between the thumb and forefinger. According to Fig. 1 (Sheet 1), the plane of the swell is perpendicular to that of the loop and eye, and the sides cross each other at each side of the swell. The sides may be in parallel planes, as shown in Fig. 3, and the position of the hooks may be reversed. According to Fig. 1 (Sheet 2), the hooks are in a plane perpendicular to that of the loop and the swell, and the arms are simply crossed between them. According to Fig. 1 (Sheet 3), the loop, swell, and hooks are all in the same plane, and the arms are locked together between the loop and the swell, but the loop may be in a plane perpendicular to that of the swell and the eye, as shown in Fig. 7.

766. **Johnson, J. H.**, [Nye, F. C.].
March 2.



Fastening.—Relates to snap-hooks for reins or straps, and, in larger sizes, for traces. The hooks are made of one piece of wire or other flexible and elastic material bent into a loop A, sides B, and two hooks C. The closed part of each hook covers the open part of the other, making a closed eye, which is in a plane at right-angles to that of the loop and sides. The sides may be either bent, as shown in Fig. 1, or flat, as shown in Fig. 5, and the two legs are crossed or locked together between the sides and the eye. The hooks may have finger-pieces *d*, Fig. 12, to facilitate opening. They may be made of oval or half-round iron wire, coated with tin, or of flat wire, twisted as shown in Fig. 20. They are preferably made by the machinery described in Specification No. 767, A.D. 1875. [Abridgment Class Nails &c.].

805. **Laycock, G.** March 4.



Electric harness.—An electric machine or battery is connected to the bit, bellyband, and kicking-straps affixed to the horse's legs to stop, urge on, or control the animal. The parts *a*, *b*, Fig. 3, of the bit are insulated from each other, and are connected to the battery or machine by wires on the reins. The bellyband or girth is fitted with two pieces of copper near the places where the spurs are usually applied, and the straps buckled round the hind and fore legs of the horse are lined with copper. Another appliance to replace this kicking-strap consists of a metal spring shown in Fig. 6. The machine or battery may be placed in front of the rider on a saddle horse, or under the driver's seat in a conveyance. To prevent the horse from running away, the machine is attached to the brake, and is rotated by the wheel when the brake is applied.

937. **Rowand, M.** March 13. [Provisional protection only.]

Fastening pole chains or traces, to enable a fallen horse to be quickly released. The pole chain or trace is attached by means of a bolt screwed into a nut in the end of the pole. By unscrewing the bolt the chain or trace is released.

972. **Kain, J. F.** March 16. [Provisional protection not allowed.]

Whips.—The handle of a riding-whip is hollow, and is closed by a screw top or otherwise. The receptacle thus formed contains a powder puff, ivory puff, or rouge puff, and may be fitted with needles, cotton, thimble, and scissors, and other articles of a "ladies' companion." The receptacle may also contain a tablet or memorandum book, or sketching and drawing pencils, or may be used for holding a railway ticket.

986. **Coleman, T.** March 17. [Provisional protection only.]

Clothing for animals; fastening.—Rollers for horse cloths are rendered elastic by springs contained in metal tubes arranged in a leather casing on each side of the pad or middle piece. Leather straps, secured to the rear end of the springs, pass through the tubes and are attached to the webbing on one side by buckles and on the other side by stitching. The tubes and springs may be circular or flat, the mouths of the tubes being contracted to prevent the withdrawal of the springs. These springs are coated with tin or other metal by electroplating or by boiling in a solution of caustic soda or other alkaline solution, together with the tin or other metal.

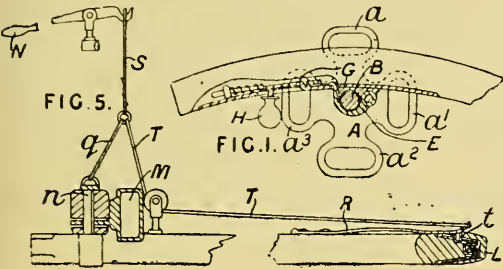
1101. **Flower, R.** March 25. [Provisional protection only.]

Horse clippers and the like.—Clippers for sheep and other animals are driven by compressed air, steam, or other fluid. The apparatus consists of a small cylinder, to be held in the hand of the operator, having a long piston, which is formed with a face to receive a slide valve controlling the admission and exhaust. The valve is worked by a rod or tappets, which come in contact with the ends of the cylinder, or other suitable part. The piston-rod carries a pin working in a slot in the arm of the moving cutter or cutters, the other cutter or cutters being fixed on the cylinder. When a number of clippers are worked together, they are supplied from one common reservoir charged with air &c.

1110. **Morgan-Brown, W.**, [Maitre, J.].
March 27.

Runaway horses, releasing.—The backband, traces, bellyband, and breeching are connected to

loops a, a', a^2, a^3 on metal plates A having pins B attached to the shafts by hinged caps E. The hinged caps are kept closed by spring catches G provided with knobs H, which are actuated by



cords or straps to release the caps E and plates A. For carriages, cabs, and other vehicles, the pins B may pass through eyes on the shafts and be secured by split-pins. Fig. 5 shows the arrangement for pair-horsed vehicles having a single shaft. The loops M for the traces are connected to the splinter-bar by sliding bolts n mounted on the ends of spring blades fixed on the splinter-bar. The ends of the blades are connected by straps, cords, or chains q to a strap &c. S attached to a lever N. The rings and buckles for the pole chains are carried by a metal piece L secured on the end of the pole by a pin or bolt t at the end of a spring R, which is also connected with the strap &c. S by a strap, cord, or chain T. By operating the lever N, the bolts t, n are withdrawn, thus releasing the horse. At the same time the lever applies the brake to the rim or hub of one of the wheels.

1206. Wolseley, F. Y. April 3. [Provisional protection only.]

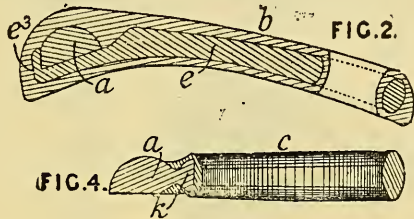
Horse clippers and the like.—Relates to apparatus for shearing or clipping horses, sheep, or other animals, and consists in giving to the upper cutter plate a rapid reciprocating or vibratory motion by self-acting mechanism. The mechanism is composed of a train of wheels actuated by a coiled spring enclosed in a case on the framework of the machine. The spring, when wound up, transmits motion through the train to a crank or its equivalent communicating with the cutter plate. The speed may be regulated by means of a brake &c. in connection with the prime mover.

1279. Shelley, J. S. April 8. [Provisional protection only.]

Horse clippers and the like.—A plate having a curved cutting edge is rotated above teeth on a portion of the rim of a circular plate by a spur-wheel carried by a spindle forming the holder of the apparatus. The spur-wheel gears with elliptical openings arranged in a circle in the plate, and is driven by a small handle. The upper plate is adjustably arranged above the lower by means of a spindle, spring washer, and screw, and is fluted

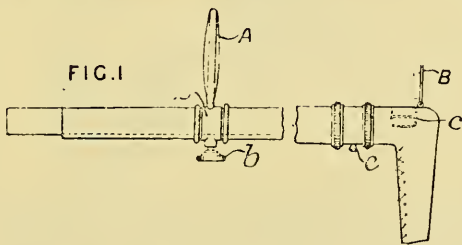
on the underside to prevent distortion. The thickness of the toothed portion of the lower plate determines the depth of hair left, and the end teeth are rounded off to avoid leaving a ridge.

1356. Harlow, P. J. S. April 14.



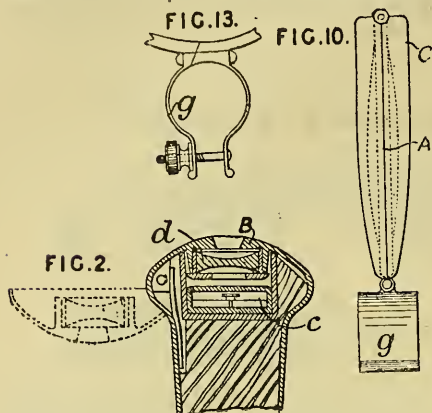
Collars, neck, hames for. The draughts, terrets, and other loops for hames consist of wrought-iron skeletons, which are attached to the hames by casting brass, German silver, or other metal or alloy round them and round the parts of the hames at which they are placed. The hooked end e^2 , Fig. 2, of the skeleton draught e is placed under or welded to a cranked or recessed part of the hame a , and the parts are placed in a chill mould and secured together by a covering b of cast brass or other alloy or metal. The terrets c , Fig. 4, are cast without an iron skeleton, and are similarly secured to a cleat-shaped projection k on the hame a . The loops at the ends of the hames may be made and secured in the same manner.

1379. Hosking, W. L. April 15.

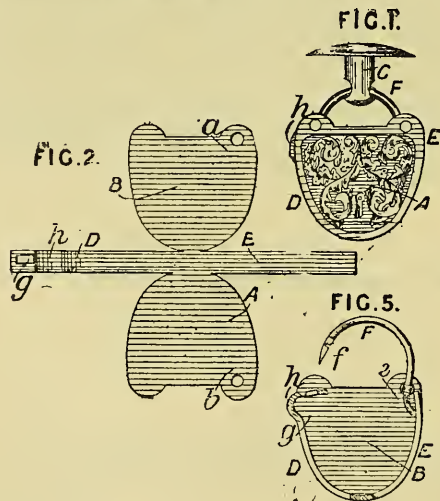


Whips.—A magnetic compass is inserted in a whip, and the whip is fitted also to serve as a telescope or field glass. Fig. 1 shows the invention applied to a walking-stick. An object glass A is attached to the stick by a clamp a , the screw b of which may enter a guiding-groove. The eyepiece B is hinged to the stick at the handle, and folds down over a magnetic compass c let into the stick. A leather pouch, for containing the object glass when not in use, may be hung from an eye e on the stick. The lens may, alternatively, be covered by hinged caps C, Fig. 10, which, when opened out, form a sunshade. Fig. 10 shows the object glass carried by a spring clip g . The spring

clip may have a tightening-screw, as shown in Fig. 13. Fig. 2 shows an eye-piece B and compass c let into the head of a cane.



1407. Rollason, J. G., and Wood, J.,
[trading as Rollason & Wood]. April 17.



Dog collars.—Relates to a fastening for dog collars &c., described as applied to solitaires and sleeve-links. A blank of the form shown in Fig. 2 is bent to form the part A, Fig. 1, of the fastening, the strip D being bent outwards at the part h, Figs. 2 and 5, to form a thumb-piece for releasing the fastening, and provided with the slot g to receive the notched end f of the loop F. The loop has side projections to pass through the holes a, b, Fig. 2, to hold the parts A, B together, and to act as pivots upon which the loop turns. A heel c on the loop bears against the end E of the strip to produce a spring action in the loop. The back part of the fastening consists of a metal or other disc pierced to receive projections on the tubular shank C, Fig. 1, the projections being flattened down by stamping a device on the disc.

The front end of the shank C has openings through which the loop F is passed. The disc may be replaced by a flexible strip which passes round the article to be fastened, the shank or a staple being fixed at one end, and slots formed in the opposite end through which the shank or staple is passed and secured by the fastening A, Fig. 1. For dog collars, the front, back, and sides of the fastening A are in separate pieces, and may be connected by a rivet. The loop is made tubular in form. The front and back of the fastening A, Fig. 1, may be circular or other shaped, and may be embossed, engraved, enamelled, or otherwise ornamented, or may be formed to receive a photograph, or a piece of ivory, glass, wood, or other ornamented material.

1486. Myring, C. April 23. [Provisional protection only.]

Preventing horses from falling.—A receptacle containing ashes or other substance suitable for preventing the feet of a horse from slipping on ice &c. is attached to the harness or saddle and communicates with the horse's feet through holes controlled by springs and reins. The apparatus may be so arranged that the material is liberated automatically by the movements of the horse's feet. The receptacle may be made part of, or separate from, the harness.

1504. Page, H. L. April 23. Drawings to Specification.

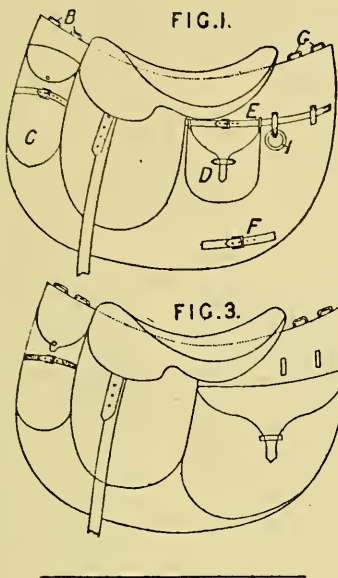
Fastening, studs or buttons for. Relates to studs for wearing-apparel, stated to be applicable also for fastening harness. The stud is formed with a flexible and extensible shank consisting of a piece of wire doubled and enclosed in a helical spring. One end of the enclosing-spring is attached to the base of the stud, and the other end to the wire at the head of the stud. The spring is enclosed in a metal sleeve fixed to the base of the stud. In a modification, the flexible shank is made in halves, which are attached respectively to the head and base of the stud.

1535. Crichton, H. G. L. April 27.

Saddles.—Military saddles are made lighter, and the load is more evenly distributed on the horse's back, by transferring the attachments to the front and back parts of a leather numnah, made in two parts, single at the centre and double at the ends. Fig. 1 shows a side elevation of the arrangement, the wallet C, shoe case D, nosebag ring I, sword straps E, F, and the loops B, G for the cloak and centre baggage-straps being arranged as shown; the bucket for the carbine is arranged on the opposite side. Fig. 3 shows a similar construction of numnah for the use of civilians, the fittings for arms being dispensed with.

(For Figures see next page.)

1535.



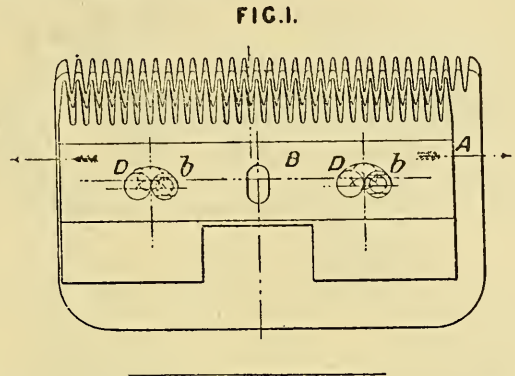
1555. **Simons, R. H., and Martin, A.**
April 28. [*Provisional protection only.*]

Horse clippers and the like for clipping and shearing horses, sheep, and other animals, with one or both hands, or by power. The working parts move on hard steel surfaces. The meeting faces of the two cutting-plates are flat. The plates are held in place by screws "passing through the "bottom and screwing the lower and upper cutting-plates into a steel springing bar;" check nuts are placed on the screws. The edges of the plates &c. are chamfered to avoid marking the animal. To give to-and-fro motion to the upper cutting-plate, a round pin at the end of the upper lever passes through a round hole in the movable plate and "acts through a sliding-block to the bottom "lever." If the apparatus is to be used with one hand only, there is "a tumbler motion upon the "bottom lever," and the fixed handle is secured to the cover plate. A spring "springing from each "side with a centre circle" is attached to both handles, of which one has a bow like a scissors handle, and the other a bent end. "A flat, long, "and hollowed or fluted tooth" is used especially for sheep clippers. To drive the upper cutting-plate at greater speed, "a mechanical motion" is employed; it is "attached to the handle with a "spur-wheel, having a pinion-shaft so as to gain "speed upon a flywheel and an endless screw work- ing an eccentric;" this arrangement may be worked by a handle, or an additional wheel, or otherwise.

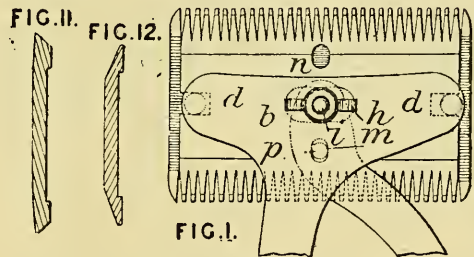
2068. **Laloy, J. F. A.** June 5.

Horse clippers and the like.—The upper cutter B is guided by pins *b* working in curved slots so that it gives a drawing cut. The upper cutter is preferably made to travel over the space of two teeth

on the lower cutter A, advancing for the first cut and retreating for the second.

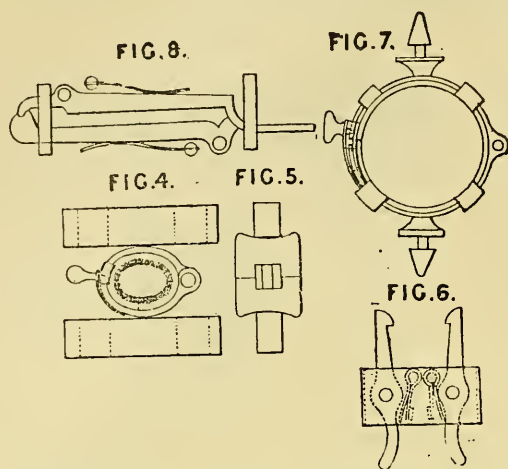


2216. **Phipps, T. L., and Burman, W.**
June 16.

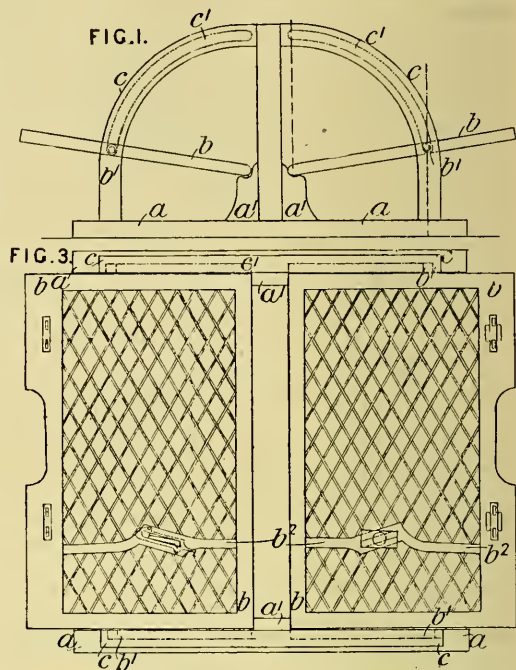


Horse clippers and the like.—Relates to modifications of the clippers described in Specification No. 2970, A.D. 1873. Instead of using a bow spring between the expanded or cover part *b* of the fixed handle and the movable cutter, the part *b* is made both as a cover and as a spring; for this purpose it is bowed and made of a yielding thickness. It is tightened by a nut *h* on the pivot pin *i* or by a cottar. The ends of the cover are provided with studs which pass through guiding-slots *d* in the movable cutter and take into elliptical holes in the fixed cutter. Or the cover may be flat and rectangular with inclined sides or edges divided at the angles and made thinner than the principal part. A spring of this form may be used under a rigid cover. If the clipper is "double-acting," that is, made with teeth on the front and back edges of the cutters, the movable cutter is formed with two oblong slots *m*, *n* into one or other of which the stud *p* of the movable handle takes for giving the required to- and -fro motion. To reverse the clipper the nut of the central pin is removed, and the handles are shifted. The stud *p* may be on either side of the pivot. The cutters are made from steel bars rolled to sections shown in Figs. 11 and 12, for the bottom and top cutters respectively. Suitable lengths having been cut off, the teeth are cut in the ordinary manner. The outer face of the bar for making bottom cutters is rolled convex. The edges of both bars are bevelled as shown. Similar bars may be used for making single-acting cutters.

2233. Turquand, W. M. G. June 17.



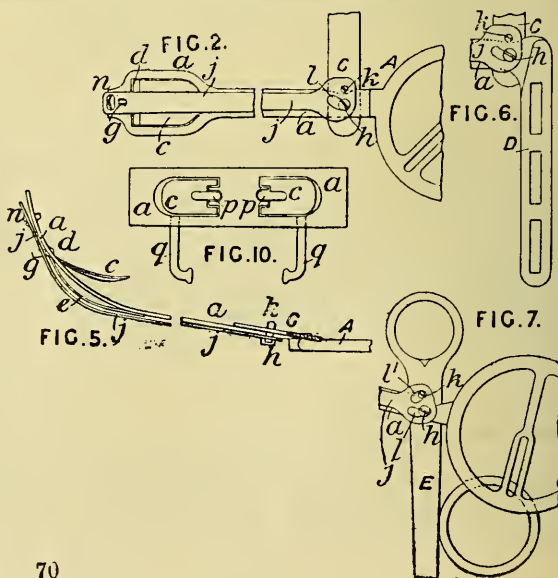
Animals, stocks and like appliances for holding.—Apparatus for shearing sheep, consists of two side frames, so arranged that the animal can be readily secured to one of them, moved into convenient positions for shearing, and transferred from one frame to the other. In Figs. 1 and 3, the side frames *b*, which are of wood and covered with netting, have pivots *b'*, *b'* which can move along the curved grooves *c'*, in the standards *c* fixed to the bed frame *a*. The collar, shown in Fig. 7, which holds the neck of the animal, consists of an iron band fitted with a hinge and a spring catch, and is lined with leather. Conical-headed pins project from the iron band on opposite sides as shown, and one of these is passed through the slot in the iron bar *b'*, Fig. 3, and held by the gripper shown in Fig. 8. The clips for the legs, shown in Figs. 4 and 5, each to hold two legs, have riveted to each side a plate with two holes. The



clips are held to the frame *b*, Fig. 3, by the latches shown in Fig. 6. In using the apparatus, the frame *b* is turned into the vertical position indicated by the dotted line through *b'*, and, after the sheep is secured by the clips, is turned about the pivots *b'* until one end rests on the support *a'*. After one side of the sheep has been shorn, the frame is turned to the position shown by the dotted line through *a'*, and the sheep transferred to the other frame *b*. To permit the shearer to approach as closely as possible to his work, the frames *b*, Fig. 3, have recesses in their sides.

2254. Brodribb, W. A. June 19.

Stopping and controlling runaway horses; bridles; horse-breaking harness.—The nostrils of a horse, colt, or ox are compressed by padded levers operated by curb reins attached to rings A, Figs. 2 and 3. A band *a* passes round the nose of the animal, and is fitted with levers *c* on pivots *d*. The curb rein being pulled, the band *a* is moved on the studs *h* on the uprights *C*, thus causing the connecting-pieces *j* to turn on pivots *k*. The pieces *j* are also drawn along the band *a* by the studs *h* in the slots *l*, and are thus caused to move the pins *g* and the pieces *c*. When the reins are slackened, the pieces *c* are lifted by a spring *e*. The screws *n* and springs *g* pass through slots in the pieces *j*. In a modification, the link *A* is replaced by a side bar *D*, Fig. 6. The arrangement preferred for driving is shown in Fig. 7. The band *a*, working on the stud *h*, and the pieces *j* are formed

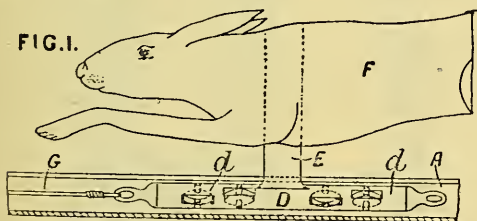


with two slots *l, l'* working on the studs *h k* which are screwed into the cheeks *E* at the bit. The curb rein is attached to the splashboard. The apparatus may be applied "to the T-pieces of a military "watering bedouin." Fig. 10 shows an apparatus for controlling oxen. A metal band *a* is fitted with levers *c* operated by cords or ropes attached to the rings *p*. Hooked padded bars *q*, which are omitted when the apparatus is used for breaking-in young colts, are attached to the levers *c* so as to move in and pinch the cartilage of the nose.

2388. Day, G. June 30. [*Provisional protection only.*]

Controlling restive horses.—The ends of a strap encircling the neck of the horse are passed through an eyelet on the head-piece of the bridle and through rings on the bit, and are provided with rings to be buckled to the spare reins. By this means the strap may be drawn tight round the neck of the horse. The arrangement is also applicable for preventing kicking, by continuing the ends of the strap through the hames, terrets, and a loop on the crupper strap, and buckling it to "the bar." The rising of the horse, in attempting to kick, causes the strap to tighten on the neck. When used as a combined check rein and kicking-strap, the check reins are connected at any convenient part. A spring blade on the lower part of the loop relieves the pressure on the neck when the strap is slack.

2476. Geary, F. July 9.



Training animals.—Relates to apparatus for training and testing dogs, and comprises an imitation hare or other animal moved by mechanism. Fig. 1 shows the animal figure *F* fixed to the stud *E*, which is carried on a block *D* and projects through a slot in the upper part of a tube *A*. The tube *A* is embedded in the ground, and the block *D*, fitted with antifriction rollers *d*, is drawn along it by a cord *G*, which may be wound upon a winch barrel and hauled in by hand or horse power. In another arrangement, the cord is attached directly to the figure and is guided by a number of clip rings arranged so that, directly the animal reaches them, they are released and carried along by a cross-piece or enlargement on the cord. Or the cord may be carried over elevated pulleys and guided by eccentric discs fixed to the pulley brackets. A tapered swell on the cord, somewhat in advance of the image, throws the cord off

the pulleys, to enable the image to pass clear underneath them.

2582. Richards, J. July 20. [*Provisional protection only.*]

Fastening traces. The trace hooks are placed on adjustable pins in the shafts and are formed with downwardly-projecting arms which are secured to the traces by short bands. When the brake handle is pulled over, the trace hooks are turned into a horizontal position, and the traces, thus freed, act on a cross-bar to apply the brakes and check the horses.

2618. Howard, J., and Cox, W. July 23. [*Provisional protection only.*]

Saddles, girths for. Relates to a saddle girth tightener which prevents the saddle from slipping, and consequently the usual crupper and breast plate and strap may be dispensed with in military accoutrements. A buckle is attached to one end of the girth and one of the "tighteners" and a strap to the other. The "tightener" consists of a small flat or curved metallic box enclosing two, three, or more longitudinal draw-rods encircled by coiled springs, which have a constant tendency to draw the rods and strap towards the box and thereby tighten the girth.

2640. Adie, P. July 24.

FIG. 4.

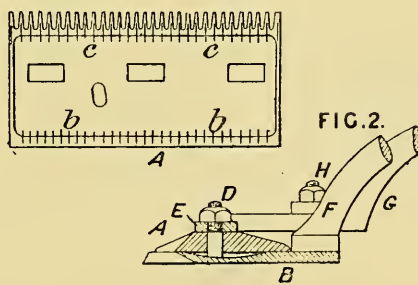
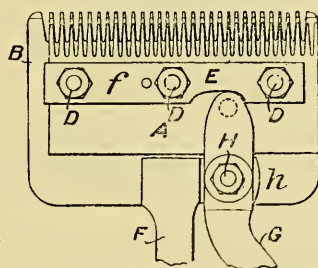


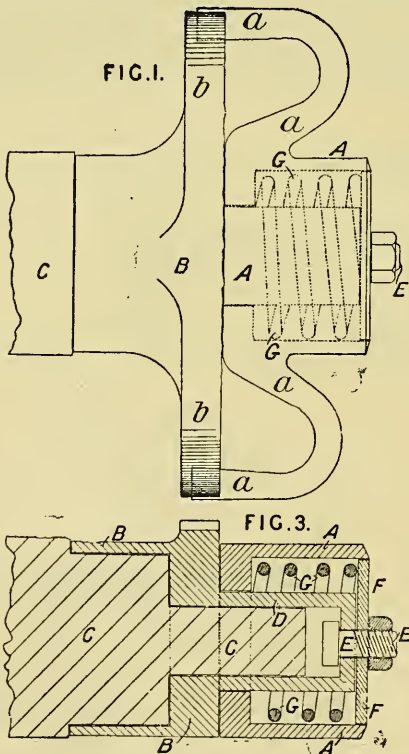
FIG. 1.



Horse clippers and the like.—Relates to improvements in the apparatus described in Specification No. 2796, A.D. 1866, and consists mainly in means for keeping the rubbing parts of the clipper constantly lubricated. Either or both of the plates *A, B* are formed with a concavity on the inner side

to form an oil reservoir, from which the oil passes to the rubbing parts through cross cuts or grooves *b, c* in the plates. The plates are held together by three or more screws or studs and nuts *D*; each stud may have a separate washer but one continuous washer *E* is preferably used, which is made concave or with a longitudinal chase and cross-cuts on the underside for lubrication. Oil is supplied through a hole *f* in the washer. When the handles are separated, the hole faces the middle slot in the upper plate, but when the handles are closed together, the washer serves as a cover to the slot. Grooves are cut in the teeth of the plates and in the flat margin left round the cavity, for the passage of oil. The fixed handle *F* has an arm *h*, which is secured to the lower plate by a rivet or screw and by a stud *H* which forms the fulcrum for the movable handle *G*. The Provisional Specification states that "the teeth travel 'over two or more of each other, having a spare 'tooth always on the top plate,' so that every under space is crossed by a top tooth.

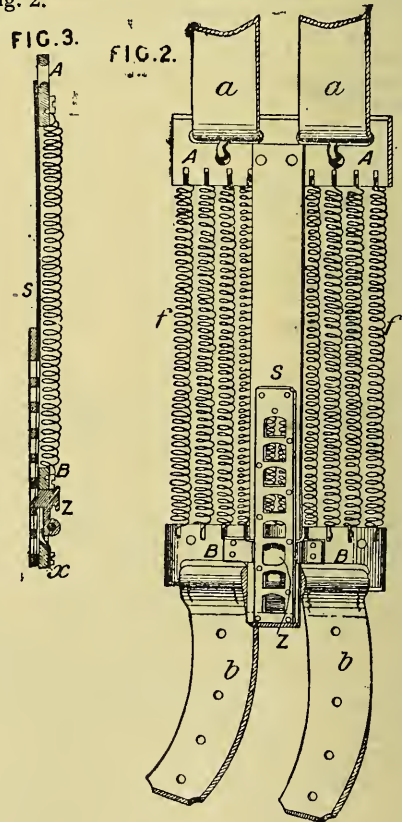
2705. **Bray, G.** July 30.



Fastening pole chains. A crab or pole end for a carriage, wagon, and other vehicle is made so that, when a horse falls, the piece *B*, Fig. 1, is rotated by the pole chain, which is then slipped off from the half-ring *b* by pulling the pole *C* forwards, the pole chain of the other animal being retained on the other half-ring *b*. In a modification, the half-rings *b, a* are arranged in the same plane, and an

incline is made on the part *B* so as to fit into a recess in the part *A* and retain the pole in place. When this form is used, both animals are released automatically by the fall of one. In another form, similar to that shown in Fig. 1, a V-shaped double incline or projection on the part *B* fits into a corresponding recess in the part *A* so as to force apart the pieces *A, B* and release the fallen animal. The plate *F*, Fig. 3, which compresses the spring *G*, is secured to the cylinder *D* on the part *B* by a bolt *E*. Double chains are dispensed with, and the pole chain is secured to the pole by a link or projection passing into the loop *b*. An eccentric or projection may be fitted to the parts which secure the animal to the pole head so as to be in its ordinary position below the opening, but, as soon as the animal falls, the eccentric or projection rises and forces the parts *A, B* asunder. The spring catch in a similar apparatus described in Specification No. 766, A.D. 1869, is modified so that the spring, preferably a "sear" or blade spring, acts on both the catch and the movable part of the eye so as to allow these parts to move freely, and the mechanism containing them is enclosed in a box or case of metal, leather, or other material, to exclude dirt.

2723. **Beck, W. H.,** [Steinbach & Co., A.]. Aug. 2.



Fastening saddle girths, spring attachments for. The ends of the girth are buckled to the straps *b*

of spring frames, Fig. 2, which are attached to the saddle frame by straps *a*, and consist of upper and lower plates A, B united by single springs *f* arranged side by side, or by double springs placed one inside the other. The girth is prevented from slacking by a plate S fixed to the upper plate of each frame and provided with slots to receive a spring catch Z hinged to the lower plate B. The upper edge of the catch is bevelled to allow the plate S to move downwards in guides in the lower plate B, and the catch to enter another slot. The springs are prevented from being extended beyond a certain limit by a stop *x* on the lower edge of the plate S. The catch also prevents the girth from slacking in case the springs break. In some cases the springs are connected directly to the girth.

2983. Edwards, S., and Edwards, H. Aug. 25. [*Provisional protection only.*]

Saddles.—The heads of saddle-trees are formed from single pieces of wood by special bending-apparatus.

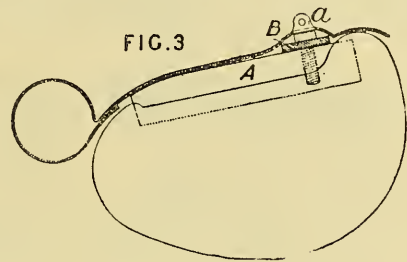
3083. Pearce, T. Sept. 2. [*Provisional protection only.*]

Fastening; repairing.—Relates to means for splicing, joining, or uniting traces and other similar leather straps. A blank, consisting of a plate or bar having at each end two parallel arms, is cut from brass &c., and the arms are raised at right-angles to the plate. The ends of the trace or strap are made to abut against each other, the arms are passed through holes pierced near each end of the trace or strap, and the projecting portions of the arms are clinched or doubled down on the leather. Two or more fasteners may be employed; they may have three or more arms instead of two.

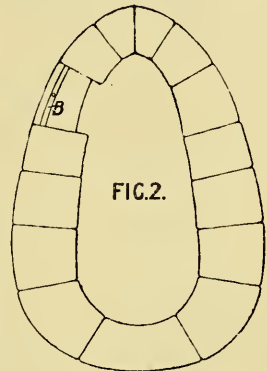
3168. Dale, T. H. Sept. 9. *Drawings to Specification.*

Clothing for animals; knee-caps.—Leggings, knee-caps, pads, and clothing, for horses and other animals, for veterinary purposes, are made of waterproof sheeting lined with felt. The edges of the articles are bound with leather, and the articles are secured by hooks or eyelets and laces, buttons, straps, or otherwise. A pad of sponge is secured at the knee, to prevent rubbing and allow free movement. The sheeting and lining are sewn together. The object of the covering is to induce perspiration and remove secretions in the skin. The felt may be moistened before applying the leggings or other articles.

3360. Carr, J. Sept. 25.



Collars, neck; padding.—The padding is formed in sections, Fig. 2, provided with wood or metal backs A, Fig. 3, which are secured to the metal strip B of the wood or metal frame by set-screws *a*, thus enabling any of the sections to be removed to reduce the pressure on any part of the shoulder or allow a sore place to heal.



3382. Lyon, W. P. Sept. 28.

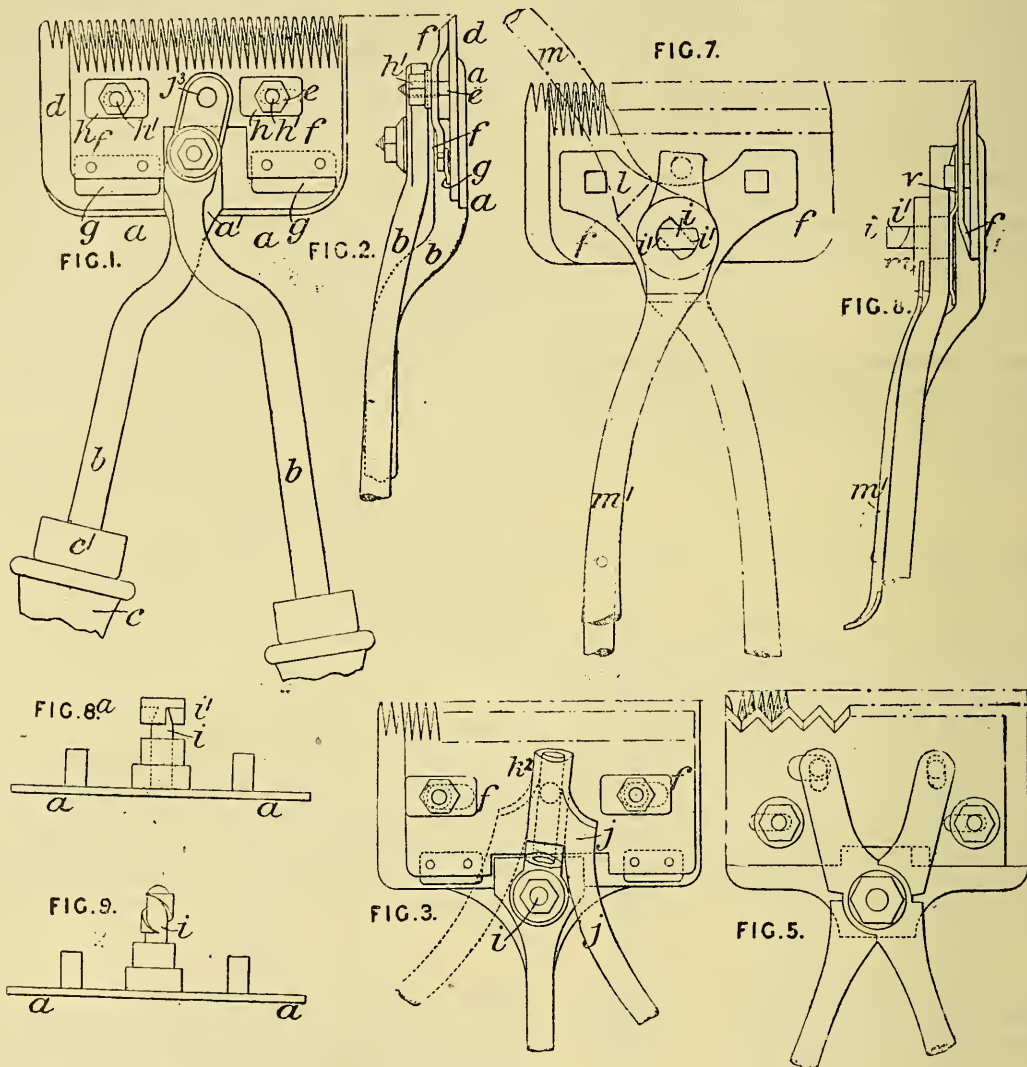
Currycombs.—Relates to the application of magnetism to curative and other purposes as described in Specification No. 1954, A.D. 1874, [*Abridgment Class Medicine &c.*]. Currycombs are made with magnetized steel or other teeth, or pieces of steel or short steel bars or rods may be magnetized and placed between the rows of teeth.

3383. Courtois, C. Sept. 28.

Horse clippers and the like.—An instrument for clipping or shearing hair from animals consists of a base-plate *a*, Figs. 1 and 2, carried by a rod *b* which is inserted in a wooden handle *c* grooved or slotted to receive a ferrule *c'*, which is thus prevented from falling out of place as the wood shrinks; a comb *d* is formed with two apertures receiving studs *e* riveted to the plate *a* and engaging corresponding but longer grooves in a second comb *f*, the movements of the sliding comb being limited by an arm *a'*. A spring *g* is placed under each side of the comb *f*, and the studs *e* pass through washers *h* covering the holes in the upper comb, nuts *h'* serving to keep the combs together. The washers *h* may be in the form of springs. The comb *f* is reciprocated by means of a pin *j* on a lever *j'* pivoted at *i*, the pin *j* engaging a hole in the comb *f*. In working, the left handle is stationary and the other handle is operated by

the right hand. In a modification shown in Fig. 3, applicable for either left or right hand working, the pin *i* carries a piece entering in a slot in the comb *f* and having two projections *h²* between

which the arm *j* is fitted so that it may be turned over as shown in dotted lines. In another modification, shown in Fig. 5, the combs are arranged so that either or both may be operated. To prevent

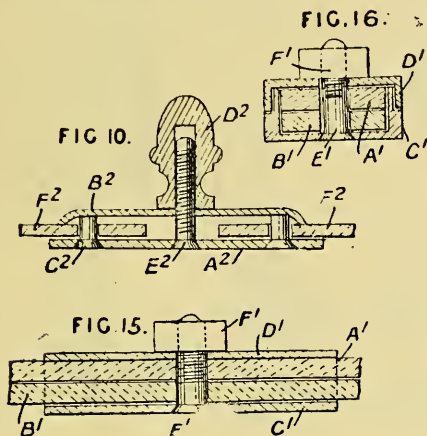


the working parts from becoming loosened, a spring *v*, Fig. 8, bears on the upper comb *f*, and a strong washer *m* provided with a lever *m'*, Fig. 7, bears on a spring *l*; the washer is placed over a pin *i*, Fig. 8^a, having two inclined projections *i'* under which the washer *m* slides, the hole in the washer being shaped as a double sector. The combs may be replaced, when worn, by moving the spring lever *m'* as shown in dotted lines, thus allowing the parts to be readily removed. The pin *i* may be formed with a thread, as shown in Fig. 9, and engage a similar thread on the washer *m*, to which a spring lever may be riveted.

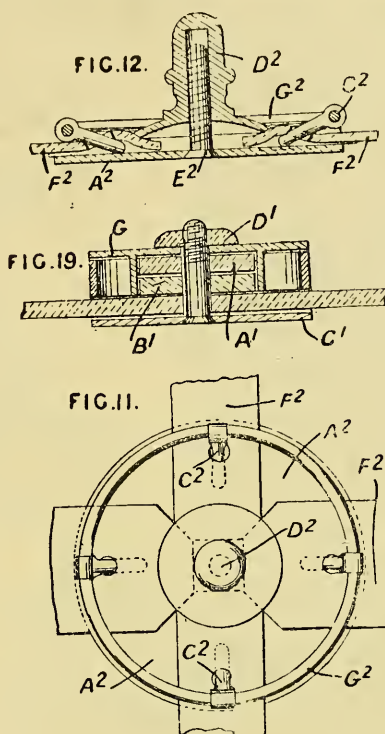
3599. Clark, A. M., [Reaser, W. T.].
Oct. 16.

Fastening, buckle attachments and couplings for. The buckles shown in Figs. 10, 11, and 12 are used for connecting three or more strap ends *F²* together as at the rump connections of harness. In one case, the ends of the straps are laid over studs *C²*, Fig. 10, on a flat circular plate *A²*, and are held by a circular plate *B²*, which is secured in place by a bolt *F²* and nut *D²*. In a modification, buckle tongues *C²*, Figs. 11 and 12, on a ring *G²* attached to the plate *A²* are passed through the ends of the straps. The inner ends of the straps are held down by a nut *D²* on the central bolt *E²*. The connection shown in Figs. 15 and 16 is intended for use on tugs and other heavy straps for

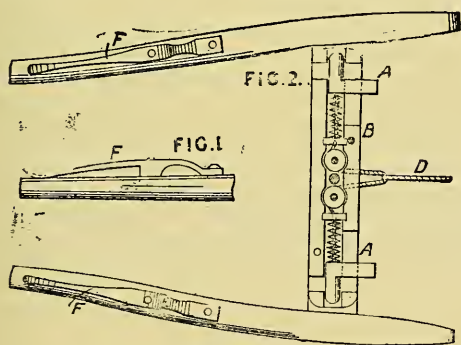
splicing two straps together in a straight line. The upper and lower pieces D^1 , C^1 of the connection are flanged and recessed as shown, in order to fit over the straps A^1 , B^1 and to fit upon each



other. The central bolt E^1 passes through holes in the straps and is secured by a nut F^1 . When a transverse strap, Fig. 19, is also to be connected, a transverse recess is formed to receive it in the lower piece C^1 , and the sides of both the upper and lower pieces are extended at the sides G to form a seat for the transverse strap.



3987. Clark, A. M., [Glover, J. W.].
Nov. 16.



Runaway horses, releasing.—If the carriage overturns, a weight attached to the cord D , Fig. 2, is released and the bolts A are drawn towards each

other in the whipple tree B , and the traces are released. The hold-back straps are released by spring clips F , shown in elevation in Fig. 1.

4206. Lake, W. R., [Tenac, C. L. van].
Dec. 4. *Drawings to Specification.*

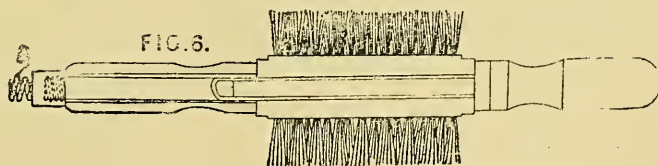
Whips.—A portable electric battery, which can heat a coil of platinum and thus ignite a small lamp or match, is mounted in a whip handle.

4228. Meadows, W. Dec. 7. [*Provisional protection only.*]

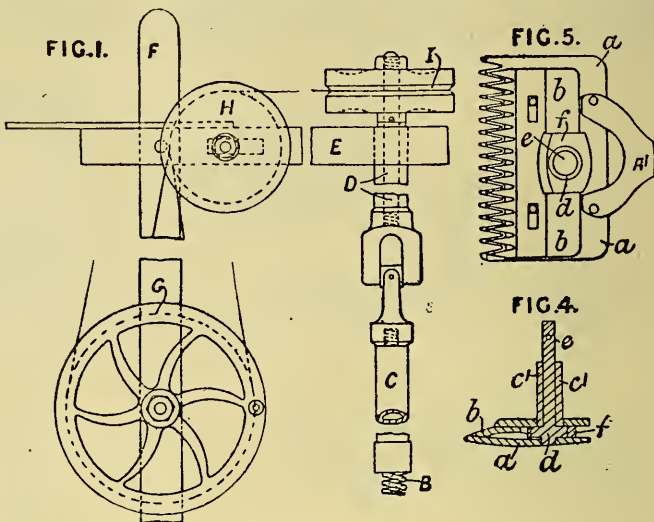
Fastening pole chains and traces. A hook is hinged to a shank, and is secured in the closed position by a link, pivoted in the shank and engaging a stop or guard on the point of the hook. A spring between the shank and the hook holds the hook in engagement with the link.

4382. Martin, A. Dec. 17.

Horse clippers and the like.—A clipping or shearing machine for horses &c. consists of a pair of shears actuated by means of an endless cord and flexible shafting from a hand



or power driven wheel. The flexible shaft is attached to the end of the spindle *e*, Figs. 4 and 5, which, by means of an eccentric *d*, gives motion through the block *f* to the upper cutter plate of the shears *b*, this plate being guided by pins fixed to the lower cutter plate *a*. A handle *A*¹ is attached to the lower plate *a*. The flexible shaft B, Fig. 1, which consists of a spirally-coiled wire, is attached to the hanging spindle C, which is made tubular, so that the flexible shaft may be telescoped into it to adjust the length of the shaft. At the lower end of the spindle C is a clip to fasten the shaft. The spindle C is connected by a universal joint to the spindle D, which is driven by an endless cord from the hand or power driven pulley G fixed to the standard F. The arm E is counterbalanced, and carries two guide-pulleys H, in such positions that the belt connecting the pulleys G and I is equally tight whether the arm E is raised or lowered, or the pin on which the arm turns may carry a two-grooved pulley, driven by one band from the pulley G, and driving, by another belt, the pulley I. If desired, the shears may be connected to the spindle C by two pieces of flexible shafting and a short horizontal shaft.



Brushing-apparatus for grooming.—The shears described above may be replaced by a rotary brush. The spindle of the brush, Fig. 6, passes through the handle and is attached to the flexible shafting. A handle is also fixed at the other end of the brush, which may be removed when brushing parts of the horse difficult to get at otherwise.

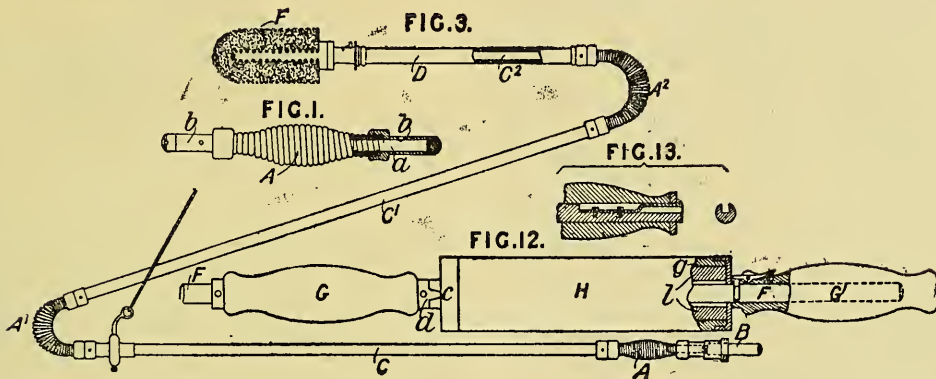
4416. Lutwyche, S. G., [*Cogent, L.*].
Dec. 21. [*Provisional protection only.*]

Saddles.—The frame is composed of pieces of malleable sheet iron, vulcanite, or other suitable material riveted or otherwise fastened together. The front flange of the frame is made in two parts, which are united by a bolt or pivot on which the parts work so as to contract or expand according to the shape of the animal. To the flange is secured a plate hinged on both sides of the saddle a few inches from the centre, and to this plate the remaining parts of the frame are riveted or other-

wise fastened. In the middle of the frame are two adjustable pads covered with felt. The saddle seat is formed of the same material as the frame. It is stuffed with felt and then covered with leather, and can be shifted at will, being secured to the frame by laces or other fastening. Springs are introduced between the seat and the tree. The sides of the seat may be perforated with air holes so that, by the motion of the rider, a kind of bellows action is produced, allowing air to circulate on the back of the animal. The expanding and contracting action above described can be adapted to the wooden or other frames of ordinary saddles.

A.D. 1876.

222. Turner, A. W., and Wilson, N. Jan. 20.



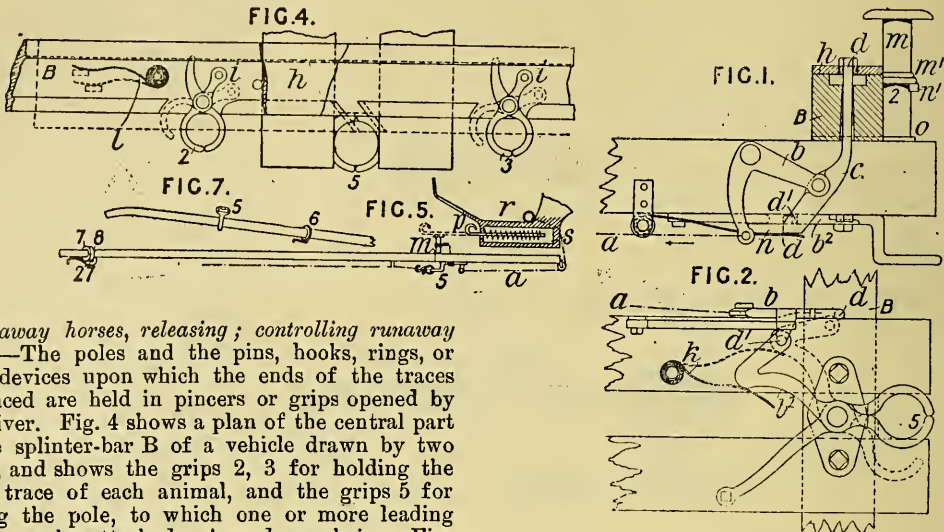
Brushing-apparatus for grooming; horse clippers and the like.—Relates mainly to apparatus for hair-dressing and for grooming horses and the like, the arrangement of shafts and universal flexible joints being also applicable for working horse clippers or sheep shearers. Fig. 3 shows a brushing-apparatus consisting of three shafts C, C¹, C², connected by universal flexible joints A, A¹, A² and driven from a shaft B, the shaft C² carrying the brush F, passing through a handle or holder D secured in position by a screw sleeve b. The universal joints are formed of helical springs A, of any suitable shape, secured firmly at each end to the shafts. In the joint shown in Fig. 1, the ends of the spring are threaded internally and externally to screw on an internal rod a and receive externally-threaded sleeves b. The sleeves b pass into sockets in the ends of the shafts to be rotated. The spring A may be made of a single wire, or it may be enclosed within an outer larger spring covered or not with india-rubber. The grooming-brush F is formed by arranging stiff bars or bristles on a stock so as to produce a hemispherical end. A drier and polisher is formed by mounting a number of thick felt discs on a central wooden stock, and a wiper is formed by fixing longitudinal strips of india-rubber &c. in grooves in a stock. The stocks of the brushes &c. slide on the end of the shaft C² and they are secured by a pin on the shaft engaging a recess in the stock, and a pin on a spring lever engaging a notch in the shaft. Fig. 12 shows a rotary hair brush H mounted on a terminal spindle F, which

has two handles G, G¹ and is rotated through shafts connected by universal flexible joints. The brush is fixed to the shaft by a notched collar c engaging a wedge-piece d on the fixed handle G¹, and a spring lever on the removable handle G¹; or the arrangement shown in Fig. 13, or other means may be used. The brush is formed by fixing bristles in holes punched in a flat piece of leather g, which is afterwards secured around the wooden stock l by means of screws &c.; the bristles may thus be readily renewed. The machinery for imparting motion to the shafts of hair-brushing, grooming, &c. apparatus consists of a flywheel mounted on a horizontal stud carried by a vertical standard and rotated by a treadle, which flywheel has a bevelled periphery for imparting motion to a vertical shaft through a bevelled friction pinion.

331. Switzer, T. Jan. 27. [Provisional protection only.]

Stirrups.—In order to keep the feet warm, the lower part of the stirrup is formed to receive a sole-plate of non-conducting material, such as hard wood or leather; in addition, the upper side of the plate is ribbed or uneven to afford a firm hold for the foot. The bottom bar of the stirrup is formed with open work.

788. Guggenbühler, G. F. C. de. Feb. 24.



Runaway horses, releasing; controlling runaway horses.—The poles and the pins, hooks, rings, or other devices upon which the ends of the traces are placed are held in pincers or grips opened by the driver. Fig. 4 shows a plan of the central part of the splinter-bar B of a vehicle drawn by two horses, and shows the grips 2, 3 for holding the inside trace of each animal, and the grips 5 for holding the pole, to which one or more leading horses may be attached. A cord or chain *a*, Fig. 1, operated by the driver, moves the lower arm of the bell crank *b*, and moves the arm *c* downwards. The pins *d*, *d'*, Figs. 1 and 2, are thus removed from the holes in the sliding plate *h* and in the arm *b*² of the pincers 5, which are then opened by the spring *k*, thus releasing the leaders. The spring *l*, Fig. 4, moves the plate *h* forwards into the position shown by dotted lines, and, by means of pins *i*, opens all the catches 2, 3, &c. simultaneously, thus releasing the other horses. When arranging the apparatus in its normal state, the spring *n*, Fig. 1, lifts the pins *d*, *d'* into the holes in the plate *h* and jaw *b*². The pins *m*, upon which the traces are placed, are made with collars *m*¹ and projections *n*¹, and are supported by

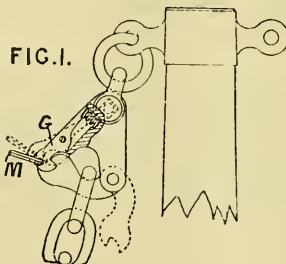
plates *o*. After the horses are disconnected from the vehicle, they are held by the reins, which are secured to a strap attached to the hook *p*, Fig. 5, fitted with a spring *r* in a case *s*. The harness of a horse in a one-horse vehicle is provided with four rings, two of which are placed on the lateral straps or tugs supporting the shafts, and two on the breeching-straps. The rings are held in catches 5, 6, Fig. 7, which permit the withdrawal of the rings. On two-horse vehicles, two rings 7, 8, Fig. 5, are connected to the fore part of the harness, and are secured by spring catches 27, or are placed on spring hooks similar to the vehicles 27.

1273. Pye-Smith, A., White, O. W., and Elliot, R. March 24. Drawings to Specification.

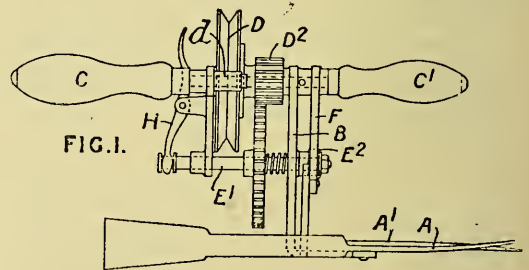
Brackets.—Harness brackets are made of wrought iron or malleable cast iron, wholly or partly enamelled or glazed.

1297. Hooker, P., and Wright, E. March 25.

Fastening pole chains or straps and traces so that a fallen horse can be released quickly. Fig. 1 shows the device as applied to a pole chain. By pulling out the pivoted piece *G*, by means of the ring *M*, the chain is released.



1460. Bentham, H. W. April 5.



Horse clippers and the like.—An apparatus for shearing sheep consists of a pair of ordinary spring shears, adapted to be actuated by a flexible belt. A standard B, attached to the limb A, carries a pulley D, pinion D², and two handles C, C'. On the shaft E¹ is a cam E² which transmits motion to the limb A¹ by means of a horn F, which is pivoted on the same axis as the pinion D² and bears against the edge of the limb A¹. The

flexible belt is kept on the pulley D by the guide-rollers *d*, and is driven by hand, horse, or other power. The shears may be thrown out of action by the lever H, which moves the shaft E' laterally and thus puts the cam E' out of line with the horn F. The shears may be formed with a series of teeth.

1634. Bing, L. April 19. [*Provisional protection not allowed.*]

Droppings, devices for catching.—A bag or receptacle is attached to the breeching and fitted underneath the carriage or vehicle. If breeching is not used, the bag is attached to other parts of the harness.

1832. Brown, E., and Brown, F. May 1. [*Provisional protection only.*]

Horse breaking and training harness; controlling runaway and restive horses; breeching.—Comprises apparatus for controlling or regulating the motions of horses, which apparatus is also applicable to the breaking-in of horses. A leather garter is placed on each of the hind legs on or above the hocks, and at the back of the legs a strap or chain is connected to them, one end to each garter. The crupper, or a suitable arrangement of straps, carries a loop containing a concave roller round which the strap works. A flat broad strap placed upon the hams of the horse is supported at its lower part by a strong cross strap situated under the horse's tail, and it carries loops on each side through which the garter strap passes. This apparatus does not impede the horse's motion in walking or trotting, but on any attempt to gallop or to put forward both hind legs at the same time, both ends of the garter strap are simultaneously pulled, the strap itself is tightened, and the attempted motion prevented. The apparatus may be applied to a horse in harness, the loop through which the garter strap passes being under the control of the driver through a rod or other connection.

1871. Goodrick, J. May 4. *Drawings to Specification.*

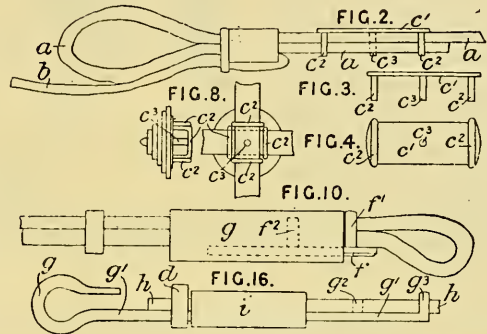
Halters.—Web halter heads are woven in a two-shaft loom, instead of by hand, the warp being made of a continuous twine or cord folded or doubled backwards and forwards upon itself the required number of times. The extreme or looped ends of the warp are left unwoven, and they serve to form, in the finished halter head, the eyes through which the rein is drawn.

1925. Mabson, J. May 8. [*Provisional protection only.*]

Brushing-apparatus for grooming.—Relates to portable hand-driven apparatus for operating "horse-grooming" and other machines. A belt

passed round the operator's waist carries a plate to which a disc is attached by a swivel joint. To the disc a bracket is secured which supports a stem projecting out from the body. The stem carries a driving-spindle fitted with a handle or handles, and, at its extreme end, the brush to be rotated, the driving-spindle and brush-spindle being connected by a belt and a pair of pulleys.

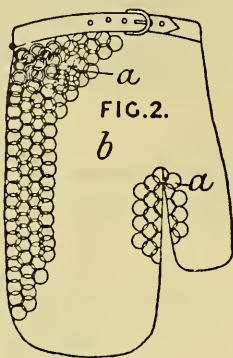
1984. Peirce, W. A. May 11.



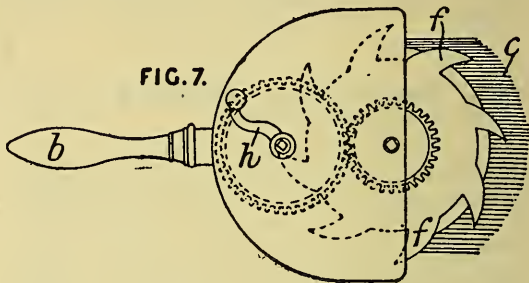
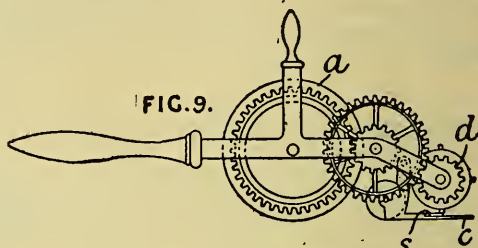
Fastening traces, shaft tugs, head gear, stirrup leathers, and other parts of harness, in which it is required to connect two straps or two parts of the same strap. The fastening consists of a metal plate *c'*, Figs. 3 and 4, of the same width as the strap to which it is applied, and having fixed to it at each end an eye or loop *c^2* and in the middle a short pin or stud *c^3*. One of the loops may be movable so as to slide along the plate or strap, and a short pin may be fixed inside the movable loop for fixing it in any position. The ends of the straps are perforated with several holes and they lie one over the other upon the plate, the pin passing through the required holes and preventing the straps from sliding through the loops. Figs. 3 and 4 show a side and back view of the fastening, and Fig. 2 shows it employed in connection with the shaft tug of a single harness. The fastening is applied to the strap *a*, which passes over the saddle, to form the loop or tug through which the shaft passes. The girth strap *b* is fixed to a loop or runner on the strap *a*. The application of the fastening to a crupper strap and to a rosette forming part of the head gear of a cart harness is also shown. Fig. 8 shows a harness rosette for connecting two straps crossing at right angles; it has two pairs of loops *c^2* and a central pin *c^3*. Fig. 10 shows a trace end having a fastening with one loop *f^1* fixed to the plate *f'* and a sliding loop or runner *g* which holds the end of the strap on the pin *f^2*. When special flexibility is required, the loops may be hinged to the plates, and for very strong work a plate may be placed on both sides of the strap. Fig. 16 shows a fastening applied for connecting a trace *h* with the clip which attaches it to the hames of the collar; the clip *g* has a plate *g^1* provided with a loop *g^3* and pin *g^2* for fastening the trace *h*, a leather runner *i* and movable ring *d* holding the end. A fastening separate from the clip may be used.

2175. Brewer, E. G., [Sebaté, I. D.].
May 23.

Scrapers, horse and like.—Relates to gloves or appliances for use, in place of curry-combs, for dressing, cleaning, or smoothing the coats of horses, cattle, &c. The gloves are made with a smooth part *b* of skin or fabric and rough parts *a* consisting of metal links or of woven, knitted, or lace fabric of gut, hemp, flax, &c. The parts *a* may sometimes be made as a partial covering to the part *b*, the smooth and rough parts being used at once or separately. The links may be soldered at parts, to give greater solidity.



moved towards and away from the handle *b*. A circular knife of razor sharpness may be used instead of the cutter *f*.

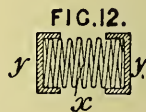


2332. Bate, H. June 2.

Horse clippers and the like.—In a machine for clipping horses and other animals, the cutter *d*, Fig. 9, which is of the lawn-mower type, is driven from the roller *a* by the gearing shown, by a going spring, or by means of a crank handle. The knife *s* is fixed to the comb plate at the root of the teeth *c*. A clipper with a horizontal cutter is shown in Fig. 7, the cutter *f* being rotated by the crank handle *h*, or by means of a handle which is

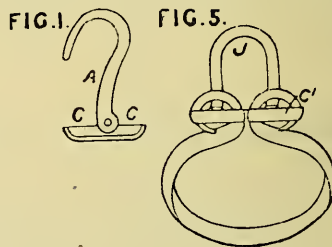
2341. Brinsmead, H. June 3.

Rein - holders. — The reins are held between the coils of a spring *x* compressed between sockets *y* clipped to the dash-leather of a dogcart or other vehicle.



2464. Olver, W. H. June 14.

Fastening harness straps &c. A fastening for harness, horse gear, straps, and belts consists of a hook *A*, Fig. 1, to which a piece *C* is hinged so that it may be turned down flat on the shank of the hook while being passed through an eye, and then turned up again. In a modification shown in Fig. 5, a pivoted piece *C'* is applied to both ends of a staple *J*.



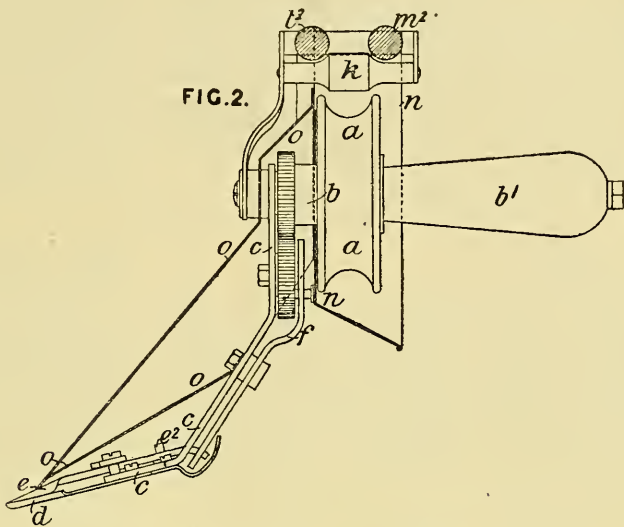
2557. Briscoe, R. M., and Ormond, A.
June 20. [Provisional protection only.]

Saddles.—Relates to military saddles. The front fork or arch of the saddle-tree is made of one piece of oak cut from the natural bend or from the root of the oak so that the direction of the fibre shall coincide with the curvature of the fork. The fork is soaked for about 48 hours in horse's urine to toughen the wood and destroy worms.

The side boards are made by preference of beech, and the rear ends are turned up or slightly curved. The panels of the tree are lined with felt, thereby dispensing with the ordinary numnah. The saddle is fastened to the horse by two girths which cross one another under the belly, thus dispensing with the breastplate and crupper. In the rear ends of the side boards are slots through which "the straps of the shoe cases" are passed.

2743. **Turquand, W. M. G.** July 4.

Horse clippers and the like.—In a machine, for shearing or clipping sheep and other animals, driven by means of an endless band of vulcanized india-rubber, a cutter *e* is moved to and fro across a series of cutters in the form of a comb *d*. The comb *d* is attached to the bent plate frame *e*, which carries the handle *b'*. The cutter *e* is hinged to the frame at *e*² and is vibrated by means of the lever *f*, the slotted ends of which engage with the end of the cutter *e* and with an eccentric pin on the driving - pinion. The pulley *a*, which is loose on the axis of the handle, is of such a weight as to keep the driving-band distended. The band is kept within the space enclosed by the two sets of rollers *l*², *m*², *k*, the rollers *l*², *m*² being divided into two or more parts which revolve independently and in opposite directions when the band comes in contact with them. Shields *o*, *n*, for preventing the fleece from getting entangled with the working parts, are provided.

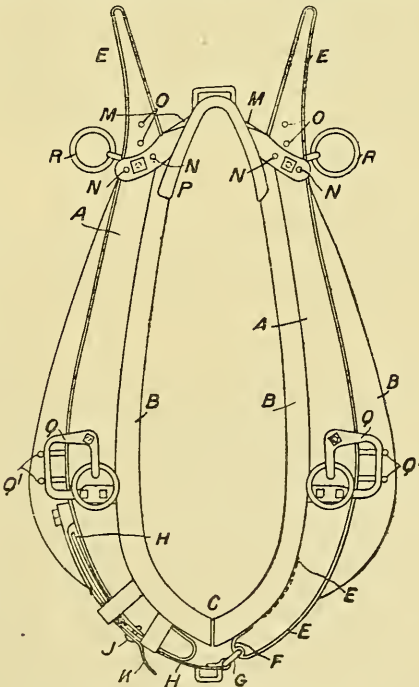


Shields *o*, *n*, for preventing the fleece from getting entangled with the working parts, are provided.

2750. **Faucher, F.** July 5. [*Provisional protection only.*]

Electric harness; stopping and controlling runaway and restive horses.—An electric apparatus or “brake” for subduing and arresting vicious or runaway horses consists of a magneto-electric machine, preferably Clarke’s, placed beneath the coach box and connected by conducting-wires to the bit and to the crupper. The axle of the magneto is prolonged under the driver’s seat and into the carriage; it is fitted at each end with a handle and is rotated by the driver or by the occupant of the carriage so as to stop or throw down the horse. The conducting-wires pass under the coach box and outside the splashboard, where they pass through the eyes of two needles in staples on the front of the splashboard. The wire attached to the crupper is fixed under the horse’s tail to a ring of copper enclosing the centre of the crupper dock. The invention may be applied to a pair or more of horses, or to saddle horses.

opening or closing the collar. A metallic strap *E* runs round the outer edge of each hame, being



bent upwards round the lower ends, as shown by dotted lines. A fastening-strap *H*, provided with

2847. **Clark, A. M.,** [Robinson, W.]. July 12.

Collars, neck; fastening.—In an adjustable combined hames and horse collar a padded collar *B* closing at the breast part *C* is fixed to the hames *A*. The collar is adjusted to the neck of the animal by a bow-shaped yoke *M*, provided with a flexible pad *P* and with holes *N* to register with holes *O* in the hames and receive securing pins and spring keys, the hames swinging on the pins in

holes, is attached to a ring G at the lower part of one hame. A spring strap K, attached to and guided on the other hame, has a pin J which enters the holes in the fastening-strap. By releasing the spring strap, the collar may be opened for removal. Draught loops Q, on the sides of the hames for the tugs or traces, are strengthened by stay-pins Q¹ which bear on their outer sides. Harness rings R are fitted at the upper part of the hames.

3120. Green, G. Aug. 5. [*Provisional protection only.*]

Bridles.—A bit or gag carries at each end a swivelling bar, provided with three rings, two of which are fixed to the ends of the bar, and the third "opposite to and nearly on the same level" "with the top ring on the same bar." A strap, after passing through the two end rings on the left-hand side of the gag, passes "through a metallic" "loop secured to the horse's head, descends on the" "right-hand side of the horse's head, passes under" "his throat, ascends on the left-hand side, crosses" "his head, passing through a second loop, and" "descending on the right-hand side of his head," "passes through the rings on the right-hand side" "of the gag, and is connected to the reins." The metallic loops are fixed on a metal plate and provided with rollers, the metal plate being carried by a strap secured to the horse's head. The sides of this strap are connected with short chains terminating in T or cross pieces, which are passed through the third back rings on the swivelling bars of the gag, and thus serve to connect the bridle to the gag. When the rider or driver pulls the reins connected with the gag, the gag is caused to press the horse's mouth, and the loop which passes under the throat is tightened, thus producing pressure on the throat and effectually restraining the animal.

3330. Whitcombe, A. Aug. 24. [*Letters Patent void for want of Final Specification.*]

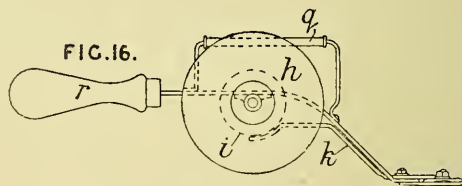
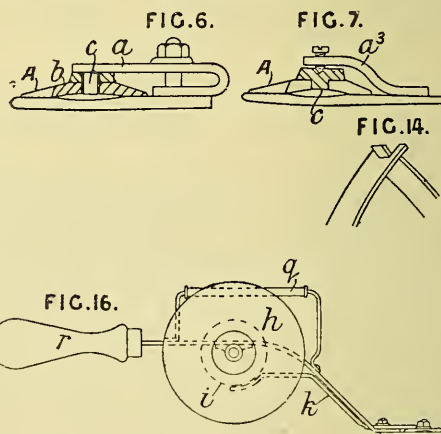
Fastening traces, shaft tugs, &c. Relates principally to apparatus for attaching the horses to carriages. Two iron rods are passed through the splinter-bar, one from each end, so as to meet at the middle through holes in the pole. The traces, provided with eyelet holes, are passed through apertures in the splinter-bar and are secured by the rods. Rings on the draught chains are passed over vertical pins on horizontal pivots. The upper ends of the pins are rounded and are held by caps or levers on a rod extending along the splinter-bar. In each end of the rod is a lever, the lower arm of which secures the cap to the vertical pin and thus holds the pin in an upright position, while the upper and longer arm is connected by a line and pulley to a point near the driver's seat. By operating the levers, the caps are lifted and the vertical pins are drawn into a horizontal position, thus releasing the horse or horses. The collar chains are attached to flat rings, which are secured to the pole by a screw. By withdrawing the screw, the collar chains are released. On four-horsed

carriages, the draw-hook is hinged near its point of attachment, and is fitted with a spring. A sliding clip is passed over the point of the hook and is connected by a line to a point near the driver's seat. On pulling the line, the hook opens and the draw-bars of the leaders are freed. The bars may be also freed by similar hooks and clips attached to the traces of the horses. The pole hook is released by "a spring trigger, worked also" "by line and pulley."

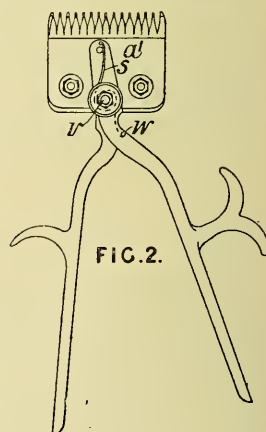
3434. Keey, W. H. Aug. 31.

Fastening.—A detachable button or other fastening for harness is formed with a shank to pass over a loop on a concave, circular, or other metal disc, which is slotted at the centre, the piece of metal being cut away only at one end, then bent to form a loop, passed through the shank, and again soldered to the disc. The disc is passed through slits formed in the article to be fastened.

3592. Clark, W. Sept. 13.



Horse clippers and the like.—The apparatus for shearing sheep &c. described in Specification No. 1645, A.D. 1866, is improved by making the cutting-edges of the teeth of the upper cutter plate curved, as shown in Fig. 2, by dispensing with the gearing for actuating the upper plate, and by using a coiled or spiral spring *s*, Fig. 2, to open the handles and thus give a return or back cut, but other springs may be employed,



such as those described in Specification No. 2373, A.D. 1874. The pressure on, and the movement of, the upper cutter plate is regulated and governed by the spring fingers *a*, Fig. 6, which are described in Specification No. 1228, A.D. 1873. The apparatus may be arranged to be driven by power. Stud *c* attached to the fingers *a* project through the washers *b* and enter the slots in the upper cutter plate *A*. One modification of the fingers is shown in Fig. 7. The fingers *a*³ are fitted with set-screws which enter recesses in the washers, the washers being formed with studs *c* which take into slots in the plate *A*. A second modification is shown in Fig. 2, the spring plate *a*¹ being arranged to exert pressure only on the roots of the teeth. The spring *s* is applied to the fulcrum stud *v* and presses upon the throw pin or on a pin *w* fixed in the working handle. When springs such as those described in Specification No. 2373, A.D. 1874, are used, the spring blades may be connected as shown in Fig. 14. When the upper cutter has an oscillatory motion, the pressure fingers are replaced by a fan-shaped plate which forms a prolongation of the working handle. This plate bears uniformly on the cutter plate near the roots of the teeth, and the pressure is adjusted by means of a spring washer or a spiral spring, and a nut on the fulcrum pin. The clipper shown in Fig. 16 is driven by an elastic cord which passes over the grooved pulley *h*. Motion is transmitted to the upper cutter by means of the lever *k* and cam *i*. The pulley *h* may be removed and a flexible shaft attached to the cam shaft, or the flexible shaft may be attached to a spindle passing through the handle *r*, a crank-pin on the end of the spindle working the lever *k*. A handle *q* is provided, which, in conjunction with the handle *r*, enables the operator to regulate the pressure of the lower plate upon the animal, and to guide the apparatus with ease.

4120. Ware, A. S. Oct. 24. [*Provisional protection only.*]

Rein-holders.—A rein-holder for a carriage or other road vehicle consists of a thin metal plate fixed to the dashboard &c. and provided with a spring, between which and the plate the reins are passed and held. The plate may be perforated round the edge and sewn to the dashboard &c., or fastened by hooks upon it and straps passed through holes in it.

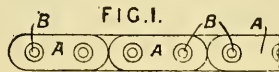
4153. Cole, J. Oct. 26.

Whips; saddles; stirrups.—For curative purposes, strips of magnetized steel are placed in parallel rows or otherwise between two thin sheets of cork which have been soaked in Stockholm tar thinned down with benzoline, and the covered magnets are laid between cloth, flannel, or other suitable material, the edges of the sheets being previously cemented together. The combination is made into saddles, whip handles, stirrups, and other articles. The cork covering may be omitted with leather-covered articles, and any other magnetizable metal may be used instead of steel.

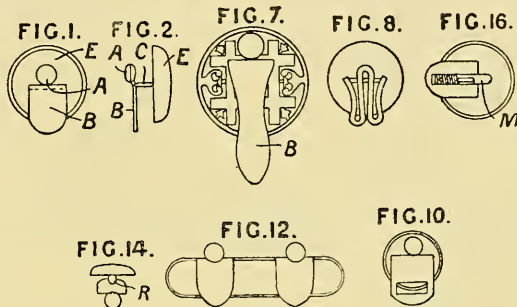
4543. Oldfield, J. Nov. 23.

Straps and bands; traces; saddles.—

Belts, bands, or straps for harness, especially traces and shaft loops, are made of leather, gutta-percha, millboard, or other links *A*, Fig. 1, having semicircular or slightly-curved ends and connected by rivets, pins, or laces *B* passing through holes in the ends of each.



4811. Jefferys, J. C. W. Dec. 13.



Fastening, studs for. Relates to fastenings for harness and other articles, described as applied to a solitaire. To the top *E*, Figs. 1 and 2, is attached a flat pillar *C* provided with a plate *B*, which has a ball or flat bead *A* soldered to it, the parts *B* and *A* being passed through the holes in the parts to be connected. The ball may be replaced by a half-ring, and the plate *B* may be almost circular or curved as shown in Fig. 7, or consists of round pillars arranged as shown in Fig. 8. The bead *M* may be acted upon by a spring, as shown in Fig. 16, or the plate may be arranged to rotate about the pillar, or the projecting bead may be hinged to the pillar. The pillars *R*, Fig. 14, are arranged to allow the stud to turn round to suit holes placed in opposite directions. The stud may have two back-plates as shown in Fig. 12, or the back-plate may have an opening, as shown in Fig. 10, to receive other articles.

4863. Del Riego, F. Dec. 15.

Stirrups, safety. Various arrangements are described for automatically releasing the foot when a fall occurs. In one arrangement, Figs. 1 and 2, the tread *c* is slotted at each end on opposite sides, and is sprung into place between the necks *e* on the ends of the legs *a*; or the slots may be formed on the same side. To increase the leverage of the foot when a fall occurs, an additional bow *f* is placed between the legs *a*, or a rod or bar *g*, Fig. 8, may extend upwards between the stirrup straps, and thus prevent the stirrup from canting. A short chain or other connection prevents the tread from being lost. Instead of reducing the ends of the legs *a* to form the necks *e*, collars or shoulders may be secured to them for the same purpose, or eyes may be fitted to receive the hooks formed by the slots.

In Fig. 5, the tread is shown slotted at one end only, and is pivoted at the opposite end to swing horizontally. A hinge is formed at the pivoted end to allow the tread to hang vertically when detached.

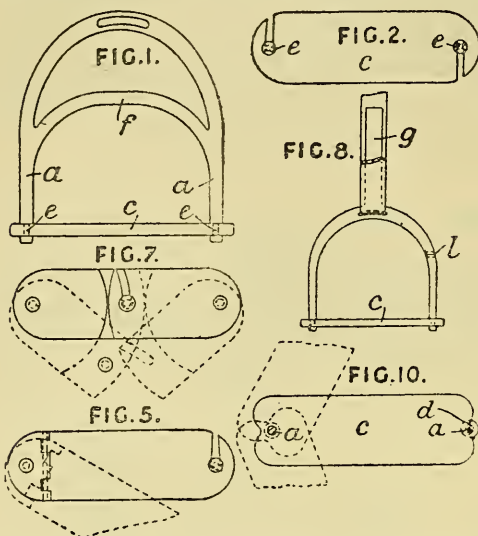
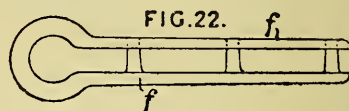


Fig. 7 shows the tread formed in two halves, pivoted to the legs and interlocking with each other; a pin in one part springs into a slot in the other in the closed position. In Fig. 8, one of the legs is provided with a rule joint *l* so as to open towards the side at which the foot is placed in the stirrup and to facilitate detachment of the tread *c*. Fig. 10 shows the tread pivoted at one end and

sprung into place, with a recess *d* on the opposite end engaging the leg *a*; or the free end may be recessed on the underside to spring over a hook on the leg. In a modification, both ends of the tread are sprung into place in the same manner as that shown for the free end in Fig. 10.

4985. **Crowley, J. S.** Dec. 23.



Fastening traces. The clip shown in Fig. 22 is connected to the end of a trace by pins which project from one plate *f* and pass through the trace and are riveted to the other plate.

4989. **Lee, C.** Dec. 23. [*Provisional protection only.*]

Horse-boots.—India-rubber overshoes, worn over the ordinary shoes, to prevent horses from slipping are used also for sick horses to keep the feet warm and dry, being specially useful when horses are turned out to grass. The overshoe is made of vulcanized or other india-rubber in a mould, and consists of a band of the shape and area of the metal shoe, having a raised edge for attachment to the foot by passing round the sides of the hoof. When the upper shoes have projecting pieces, the overshoes have openings through which the projections pass.

APPENDIX.

A.D. 1869.

201. **Cunningham, A. B.** Jan. 22. [*Provisional protection only.*]

Animals, appliances for holding.—Relates to apparatus for throwing horses and the like. A flap

to which the animal can be secured by blocks and tackle, while standing, is hinged to the floor, so that it can be brought down to the floor level. It can be used as an operating-table, legs, trestles, or other supports being fitted to it.

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The contents of this Abridgment Class may be seen from its Subject-matter Index. For further information as to the classification of the subject-matter of inventions, and for a list (with prices) of the Abridgment Classes for the period 1877-83, reference should be made to the *Abridgment-Class and Index Key*, published at the Patent Office Sale Branch, 38, Cursitor Street, Chancery Lane, E.C., price One Shilling, postage (parcel post) Sixpence.

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HARNESS AND SADDLERY.

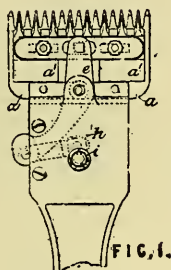
Patents have been granted in all cases, unless otherwise stated. Drawings accompany the Specification where the abridgment is illustrated and also where the words *Drawings to Specification* follow the date.

A.D. 1877.

14. Martin, A. Jan. 1

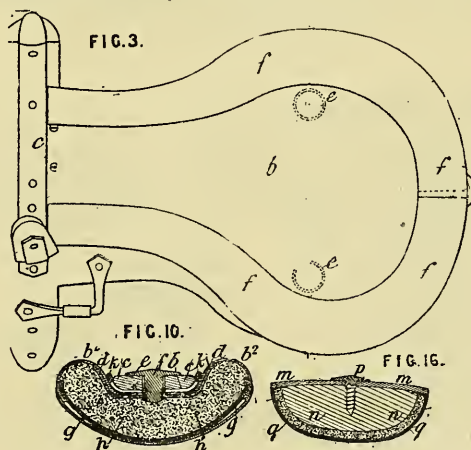
Horse, sheep, &c. clippers.—Relates to improvements on the invention described in Specification No. 4382, A.D. 1875. The upper cutter plate *a'* is formed with teeth, coarser than and twice the distance apart of those on the lower cutter plate *a*, and it is operated by means of a crank, cam, or eccentric. The apparatus may be worked by manual or steam power, and the coil of wire or flexible shaft described in Specification No. 4382, A.D. 1875, is allowed to revolve in a casing at the lower end, and is provided at each side with a link joint. Fig. 1 shows a clipper for sheep shearing, wherein the upper cutter plate is worked by a crank *h* on the shaft *i* by means of a lever *e*, but arrangements for operating the lever by a cam or by an eccentric are also described and illustrated in the Specification. For horse clipping, the teeth of the lower plate are made as fine as possible.

Abridged also in Class *Toilet &c.*



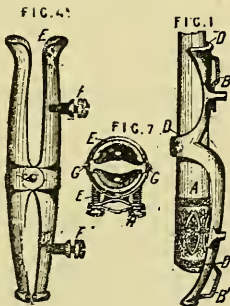
the part *H* by which the socket is attached to the vehicle. The metal parts may be electroplated, covered with leather, or otherwise finished.

393. Woolley, W. Jan. 30.



248. Davis, W. Jan. 19.

Whip - sockets.—An open frame shown in the side view, Fig. 1, holds the whip *A* by the curved recesses behind at the top and bottom and by the cross belt in front which give the three main points of contact *D, D, D*. The socket is attached to the vehicle by straps through the loops *B, B'* or by screws. A modification shown in the side view, Fig. 4, and plan, Fig. 7, consists of two curved plates opening out at the top and contracted horizontally at the bottom, which are united at *G, G* by rivets, and play on these so that the whip in opening the lower part is gripped by the closing of the upper part at *E*. Projections *F, F* at the back secure

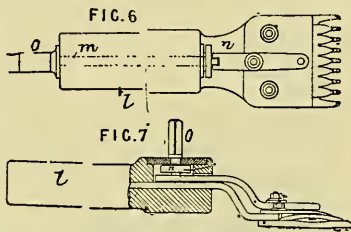


Saddles.—To form an elastic seat a foundation plate *b*, Fig. 3, preferably of sheet-iron, is fixed to the saddle-tree *c* at *b^2*, bearing at its sides on two springs *e, e*, while the hinder edge is free, but, when pressed down, rides on the back part of the saddle-tree. Outline or belly-pieces *f, f* overlap and are fixed to the foundation plate *b* to form the outline of the seat. The outline pieces are also combined with webs to form non-elastic seats of saddles. The front (convex-side) of the crutch is formed from a piece of stout leather by stamping so that the edges *b^2*, Fig. 10, are ribbed and a trough *b* runs along the middle. In this trough is laid, outside the leather *b, b^2*, a metal plate *c* curved lengthwise to the shape of the crutch and having at its end a screw which fixes the crutch to the saddle, the plate carrying the screw being thus situated outside the head. Behind the leather *b, b^2* is placed another metal plate *d*, curved like the plate *c*, and trough-shaped in section and bearing near its ends screw sockets *e* which project into holes in the plate *c*, so that ornamental or other screws *f* passed

into them bind the leather front b , b^2 firmly between the metal plates c , d . The back of the crutch is made by two or more layers of serge or soft material g which are fixed to the edges of the rolls b^2 , and the space between this back and the leather front is stuffed with flock h . A leather covering is placed over the back. The plate c may be covered with leather or left exposed and ornamented in any way. A light metal frame k may be laid just within the plate c and its edges may form an ornamental beading. Instead of the trough-shaped plate d a wooden block may receive wood-screws corresponding with the screws f . In another modification, an external plate m , Fig. 16, may form the whole front of the crutch, being united to a wooden block n by screws p . The felt or other covering at q may be fastened to the block n , or to a layer of leather placed between the plate m and the block n . Leaping-heads of ladies' saddles are made as above, except that they are permanently fixed to the head of the saddle instead of with a screw. In fastening the surcingles of ladies' saddles, a metal plate, which may be ornamented, is fastened outside the saddle-skirt, and another metal plate is fixed inside the surcingle. Both plates have screw holes and screws are passed through the front plate, skirt, and surcingle, into the inside plate.

459. Clark, W. Feb. 3.

Horse &c. clippers.—The apparatus is adapted to be held in the hand by the handle l , and is driven by power through a flexible driving-shaft. In



Figs. 6 and 7 the driving-shaft is connected at o .
Abridged also in Classes *Agricultural appliances for the treatment of land &c.*; *Mechanism &c.*; *Toilet &c.*

881. Bearman, A. A. March 5.

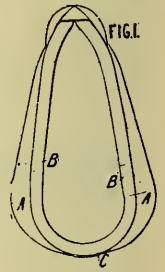
[Provisional protection only.]

Horse and like clippers, driving.—Spur or other gearing is mounted upon a fixed framing to enable it to be worked by steam, horse, or manual power. The free end of the axle of one of the wheels carries a coiled spring or wire enclosed in another, also of coiled form, and serves to communicate motion to a clipper fitted to a holder, which a man can hold in his hand. The clipper end of the inner wire is attached to a stem, from which motion is communicated by bevel-wheels to a transverse shaft carrying a grooved cam-wheel. Within the groove of the cam-wheel, the end or handle of the movable blade vibrates, causing its teeth to move over the face or teeth of the fixed handle.

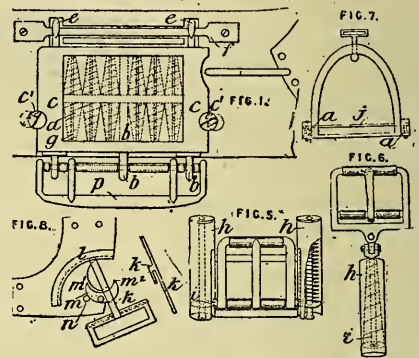
Abridged also in Class *Toilet &c.*

937. Atwood, L. L., [Payne, E.]. March 8.

Horse &c. collars.—The side pads A , A , Fig. 1, which are attached to a tubular flexible rim B , are not continuous, but united below by the band C attached to the rim B , and above by a strap and buckle or otherwise. In the rim B , preferably extending all round, is a tube or solid piece of india-rubber, a piece of rope or twisted leather, or flexible material enclosed by leather.



970. Lake, W. R., [Walterskirchen, Baron R.]. March 10.



Harness, fastening.—In the buckles and buckle attachment shown in Fig 1, the rods b are connected with a plate bearing against the volute springs a , so that connections made will be elastic. In a modification of the above, volute springs are placed around the said rods b . In the further modification shown in Figs. 5 and 6, the spring is contained in a tubular case; in the latter arrangement the tubular case forms part of the strap. To form a spring attachment for girths, the casing c , Fig. 1, containing the spring buckle attachment, is provided with nooks e which engage with the cross-bar f secured to the saddle. The eccentric-headed studs c^1 are so arranged that on turning them the casing c is released and the buckle can then be unhooked and removed.

Saddle.—The saddle bar k , Fig. 8, slides in a segmental groove l and is provided with a hook k resting on the crescent-shaped piece m , so pivoted that when the stirrup bar k is pulled vertically downward, the front end m^1 will rest on a stop n , but when the bar is pulled backwards beyond an angle of about forty degrees it will press against the other end m^2 , which, not being supported, will give way and release the stirrup bar. The Provisional Specification describes also a modification, in which the stirrup bar is movable in two short segmental guides, the front guide having a stop at the top and the rear guide having a stop at the bottom. While pulled vertically downwards, each end of the bar will rest against one of the stops, but when pulled backwards so as to be at an angle exceeding the length of the guides it will be released therefrom.

Stirrups.—The footplate *j*, Fig. 7, resting upon the volute or spiral springs *a*, is capable of vertical movement along guides. The eye for the stirrup strap is connected by a swivel to the stirrup.

Abridged also in Class *Wearing-apparel*, Div. IV.

981. Holder, V. E. March 12.

[Provisional protection only.]

Harness, fastening.—Relates to an apparatus for disconnecting the chains or straps which unite the pole cap of a vehicle to the horse collars, especially in the case of the horses falling. The rings on each side of the pole cap are formed with a hinge, the ends being shaped as tenons entering two mortices cut out of the pole cap. The latter is made hollow, so that a piston furnished with two pins may work freely therein, the object of the pins being to secure the movable parts of the rings by passing through holes in the tenons. By pressing on the piston, which is provided with a spring, the pins are released, and the chains disconnected; and by replacing the tenons and pressing on the piston, the action of the spring will cause the pins to secure them and reform the rings. As a modification, the piston may be formed in two parts, in order that one of the rings only may be opened at a time.

Abridged also in Class *Road vehicles*.

1018. Lake, W. R., [Zubovits, F. de.].
March 14.

[Provisional protection only.]

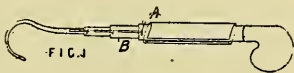
Swimming appliances for horses, specially applicable for fully-equipped cavalry horses &c. Two airtight bags are attached by straps at top and bottom, and may be inflated when required. A non-inflatable space, dividing each bag into two parts may be provided for the reception of the thighs of the rider.

Abridged also in Class *Life-saving &c*.

1042. Fauconnet, E. de. March 15.

[Provisional protection only.]

Stopping runaway horses &c.—The telescopic, jointed, blunt hook shown in Fig. 1 extends to its full length on being rapidly jerked forward, and may then be employed by the coachman to hinder the movements of, or to secure or control the horse. The apparatus is kept in a sheath secured to the vehicle. By partially revolving the joints, the pins B enter the notches A and prevent the collapse of the apparatus.



1310. Marley, F. April 4.

[Provisional protection only.]

Currycombs.—The revolving brush described in Specification No. 4158, A.D. 1874, is modified by

the addition of a currycomb formed of plates with toothed edges, preferably in opposite pairs, moving in and out in slots in the brush-stock to work near the surface of the brush. The blades are mounted by slots on pins on the ends of two arms which swivel on central studs near the ends of the blades, the pins being connected by bars so as to give parallel motion to the blade. The swivel arms are turned, directly or through teeth and rackwork, by a reciprocating bar, the other part of which projects from the revolving head and ends in a kneed piece falling into an annular groove in a hand-shifting sleeve on the fixed frame which surrounds the revolving spindle. Longitudinal movement of the sleeve sets the combs in any position, where they can be fixed by a pin in the frame locking into a notched slot on the sleeve. The combs may also be moved in and out by duplex, inclined, or conical vanes with slots, at the ends of a central spindle, which when shifted by the sleeve move the pins in the slots; or the central spindle might actuate toggle links attached to ends and inner edges of the blades. The driving-spindle is keyed to the brush-stock, or secured by having a deep socket into which the lower end of the stock is inserted and fixed by screws or otherwise.

Abridged also in Class *Brushing &c*.

1311. Speechly, E. April 4.

Fastenings for dog-collars and the like.—One end of the strap is permanently fixed in the hole *e* in the lower part of a pin or bolt *a*. The free end is then passed through a hole *b* in the

FIG. 3. FIG. 7.



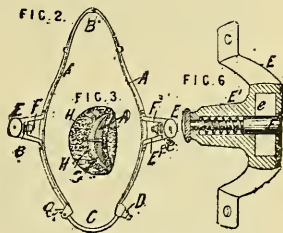
narrow screwed end of the bolt and secured by a tapped nut *d*. This nut is secured by a screw-cap *f*, Fig. 3, or by a rivet. Another arrangement is to make the screw-spindle and cap in one piece, which can be screwed to the lower and larger part.

Abridged also in Classes *Fastenings*, *Lock &c.*; *Trunks &c*.

1467. Gambling, G. April 14.

Horse collars &c.—

The iron frame *A*, Fig. 2, bears projecting draught arms *E*, *E* placed higher than usual, which secure the trace in the slot *e*, Figs. 2 and 6, by the spring bolt *F* passing through a hole in the trace. To the inner side of the frame is fixed a strip of leather *G*, Fig. 3, on which pads *H* are attached, and the whole is covered with leather. The collar is hinged at *B* and united below by a steel bow *C*, secured by a spring bolt *D* as in the trace-attachment, and curved so as to avoid compressing the horse's neck. In double harness, the pole chains or straps are attached to the bow *C*.



For cart horses, the frame is made of wood bound with iron on the above pattern but with ordinary trace attachments.

1561. Lebeau, F. D. April 21.

[Provisional protection only.]

Stopping runaway horses &c.—A cord or strap passes under the horse's neck just behind the head and through rings on the head-harness to a cord or strap running along the horse's back to the carriage. There it is attached to a hand-lever or a drum turned by a handle, the rotation of which exerts pressure on the horse's windpipe.

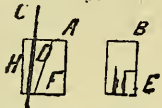
1631. Appleyard, J. April 26.

Machinery for riveting harness.

—In the cutters A, B, for severing the wire to form rivets, the wire C passes down the groove D and is cut against the edge E of the cutter B, being pressed against it by the part F of the cutter A. The upper part of the wire is carried back to the first position by the part H of the cutter A. To prevent the rivet being withdrawn from the leather in the upward movement of the cutters, a groove is formed in the underside of the cutter B. An improved operating-mechanism for the feed apparatus consists of a disc milled on the periphery and operated on and held by small friction rollers placed in tapered grooves.

Abridged also in Classes *Mechanism &c.*; *Nails &c.*; *Wearing-apparel, Div. III.*

FIG. 4. FIG. 5



1792. Garthwaite, T. May 8.

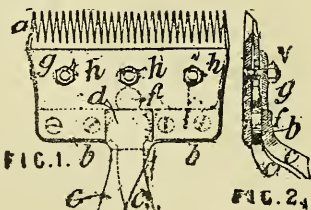
[Provisional protection only.]

Horse, sheep, &c. clippers.—Relates to apparatus in which a circular toothed cutter is caused to revolve over a similar fixed cutter, by the action of a reciprocating jointed handle. The invention is described as applied to a horse clipper. The right-hand handle is jointed, the lower part carrying a pin and roller, working in a slot in the upper part. A straight flat spring connects a pin on the top part of the right-hand handle with a pin on the upper cutter, in such a way that the opening and closing of the handle causes the cutter to make a complete revolution.

Abridged also in Classes *Agricultural appliances for the treatment of land &c.*; *Toilet &c.*

2167. Mewburn, J. C., [Lengelée, A.] June 4.

Horse, sheep, &c. clippers.—To the fixed cutter a is screwed a T-shaped piece b, the vertical limb of which forms the shank c of the fixed handle. A circular opening on the under side of the piece b receives the disc d on the shank c



of the movable handle. The rounded end f of the movable handle actuates the movable cutter, by making it slide between the fixed cutter a and the plate g. This plate g serves to tighten the cutters by means of the screws v and nuts h, and the screws guide the movable cutter upon the fixed cutter a, the holes through which the screws pass being elongated for the purpose. The clipper thus works without pin, screw, or stud. A modification for trimming is described, in which the handles are kept apart by a spring, screwed to the movable handle and bearing against a projecting piece, which is free to turn on the fixed handle. In a sheep shearing clipper, the teeth are longer and wider than in other clippers.

Abridged also in Class *Toilet &c.*

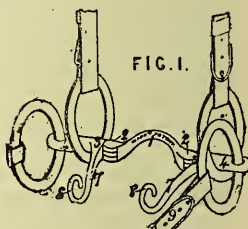
2244. Ayckbourn, F. June 9.

Nosebags.—Fig. 1 shows in section two side bags c attached to a central feeding-vessel a, and communicating with it by openings b through which the provender descends into the vessel a till these openings are closed. The vessel a may be of perforated material, and may have a flexible ring carried round the inner side of its upper edge to prevent food being thrown out. The bags c may be attached to the inner side of the vessel a, and their lower apertures may be kept open by a frame or wire, while the upper ends, which are attached to the head-strap d, may be closed by the covers e.



2264. Winn, W. E. June 11.

Bits.—The invention is applicable to the "Liverpool," "Willson," "Buxton," and other forms of bits. The mouthpiece 1, which may be straight or curved either upwards as in Fig. 1 or downwards, is hinged at its ends 2 to the bell-crank shaped chin arms 3. The latter have each two branches—(1), the short forward branch 4 carrying the rein-ring 5, or carrying a combined check and rein bar,—and (2), the long rearward branch 7, which is shaped to the lower jaw and provided with a spring hook or curled-up end 8. When in use the latter are united by a chin strap or chain. On pulling the reins 9 the horse's chin is compressed between the mouthpiece 1 and the rearward branches 7.



2267. Sowden, A. B., and Lee, F. June 11.



Horse-rugs.—Relates to those horse-rugs which are formed of jute, hemp, flax, tow,

other similar material, and lined with a woollen material by sewing, and the object of the invention is to do away with the sewing and to unite the material forming the woollen lining to the material forming the outside of the rug by means of a fine weft thread, while the rug is being woven; the under side *a* of the rug, when woven, presents a surface almost entirely of wool, at the same time that the top side *b* presents a surface like the rugs of ordinary construction.

Abridged also in Class *Wearing &c.*

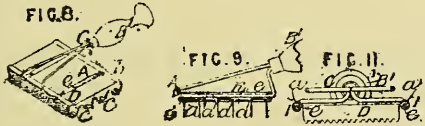
2429. Turquand, W. M. G. June 22.

[Provisional protection only.]

Sheep &c. clippers.—A knife receives reciprocating movement from a bell-crank lever, connected by means of a link with a disc crank on the spindle of a driving-wheel, and moves over a toothed cutting-plate fixed to a suitable frame. A ball on the bell-crank lever is connected by a double socket link with a ball on the end of the knife. To obtain a shearing action the other end of the knife carries friction rollers bearing on a surface attached to the frame, the pressure being adjusted by means of two nuts on the fulcrum of the knife. The apparatus is guided by hand and driven from a rotating axis above.

Abridged also in Class *Toilet &c.*

2461. Haddan, H. J., [Holmes, C. E. L., and Laurence, W. E.]. June 26.

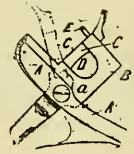


Currycombs.—The handles and grasping-device shown in Fig. 8 are applicable to currycombs, but the frame may be of any shape. To afford bearing for the notched comb bars, the projecting flanges thereof may rest directly upon the end-pieces *k* of the frame, or upon flanges *a* of the latter, Fig. 9; or the flanges *a* or the sides of the frame may be notched to receive the said projecting flanges; or the said bars may bear upon cross bars *a'* extending across the frame. To secure the toothed bars to the frame it is preferred to utilize the wire frame C, Fig. 8, by extending the parts *c* across the frame in contact with the backs of the toothed bars; or a plate may be interposed between them. In a modification of the above, Fig. 11, the comb plates D have end lips *a* fitting within tubular and slotted end bars I. For additional strength the pintles *e* may pass through the tubes and unite to the handle B, constituting part of the wire frame C. The lips *a* may first be lapped round the pintles and plates then bent round the pintles to form the tubes I. The lips may extend below or round the pintles.

Abridged also in Class *Brushing &c.*

2654. L'Amy, J. R. July 10.

Horse clippers specially applicable for cutting tails. A movable cutting-blade A, actuated by a handle A', is pivoted to a blade B, having a recess D, to receive the tail. A hinged tongue C closes the recess and is secured by a catch E.



Abridged also in Classes *Cutlery*; *Toilet &c.*

2680. Davidson, H. July 11.

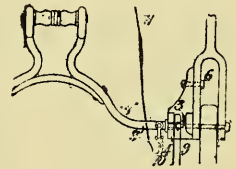
[Provisional protection only.]

Harness, fastening.—Relates to a hook suitable for traces &c. The hook is connected by a pin or other joint with the shank, and when closed has its prolonged point received into a recess in the shank, and held there by a collar which is kept over the point by a tumbler or stop fixed to the shank. Both stop and collar are movable by hand.

Abridged also in Class *Nails &c.*

2816. Bellamy, C. July 24.

Harness, fastening.—Relates to means for at once disconnecting the traces from a vehicle in the event of the horse running away or falling. The traces 9 are slipped over hooks 3 at the ends of a shaft 2, and by lifting the handle shown or turning the shaft 2 by a strap 11 connected to a crank 10, the hooks are reversed and the traces released.



Abridged also in Class *Road vehicles.*

2892. Arus, F., [Roudel, P.]. July 28.

Stopping runaway horses.—The horses are stopped by passing an electric current from an induction coil and battery across the nostrils. The electrical apparatus is placed on the driver's seat, or in a leather packet on the saddle, and is connected with the discharge pieces by a copper wire cord inserted in the reins.

Abridged also in Classes *Electricity &c., Divs. I. and III.*

2895. Clark, W. July 30.

[Provisional protection only.]

Horse clippers and the like.—In that class of clipper in which a cutter plate with a number of cutting-teeth slides over a comb or under plate, a clockwork mechanism is placed in the handle and actuates the cutter plate through a lever; a stop action is applied. Or an electric apparatus, consisting of a magnet armature forming a make-and-break switch, may be used. Or a standard carrying driving-gear for the instrument is employed.

Abridged also in Classes *Electricity &c., Div. III., Toilet &c.*

2995. Shammon, W. Aug. 7.

[Provisional protection only.]

Whips.—One or more pieces of steel or other wire are covered with flax or similar material, splittings of cane are added, and the whole saturated with wax and then tightened by cords or otherwise. It is then shaved down and covered with gut or thread.

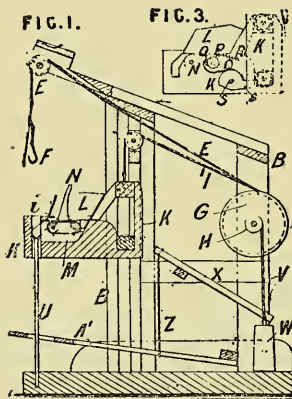
3058. Moffatt, W. J., [Lake, J. K., and McDevitt, M.]. Aug. 10.

[Provisional protection only.]

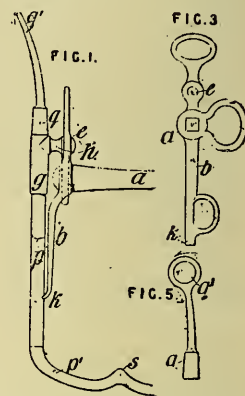
Harness, fastening.—For connecting metal fastenings to ropes, a wedge-shaped toothed clip is placed on each side of the rope and there surrounded by a ring within which is placed a bridle with shoulders to bear against the ring. The strain on the bridle tightens the wedges on the rope. For connecting traces to hames, a plate bearing two hooks is used, one of which is attached to the hames and the other to the trace. The trace may be of rope with the above apparatus attached.

Abridged also in Class *Ropes &c.***3164. Clark, A. M.,** [Grayson, B. F.]. Aug. 20.*Stuffing horse-collars.*—The carriage

K, K, Fig. 1, working vertically on wheels in the frame B, B, and the hook F, which bears the collar to be stuffed, are moved simultaneously up and down by ropes I, and E, passing over pulleys and attached to the wheel G. A weight W hung on the shaft H draws up the carriage and collar, but when the weight is raised by the treadle A', acting through the rope Z and rocking lever X, the carriage and collar descend, the latter, held by a workman, coming upon a stationary fork U, by which it is stuffed with straw fed by a toothed band M which forms the bottom of the straw-hopper L. A pulley O, Fig. 3, on the journal of one of the rollers N, is connected to the latter by a pawl and ratchet-wheel P. A strap Q connected to a spring R and to a segmental pulley S passes over the pulley O, and thus when travelling forward actuates the roller N and the band M passing over it. The pulley S has a projecting arm s, which strikes on a stop in the frame B when the carriage K rises, and thus the strap Q is pulled round and the band M moves the straw onward. The descent of the carriage releases the arm s from the stop, and the spring R draws up the strap Q again. The fork U may carry a guard to limit the quantity of straw taken up, and a plate prevents the outlet of the hopper from being clogged.

**3168. Henderson, A. C.,** [Garnier, J., and Lecertisseur, M. A. J.]. Aug. 21.

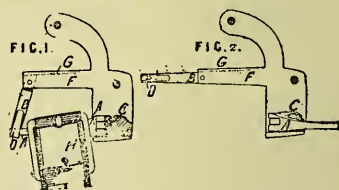
Bridles.—To an ordinary bridle bit b, Figs. 1 and 3, with the bar a riveted into a square hole, there are added rings e fitted with pivots h, on which is supported by the collars g a U-shaped piece formed of the hollow rods p screwing below into the part p' and above in the bars q terminating in the rings q', Fig. 5, to which the brake rein is attached. The part p is ordinarily held by elastic pressure in the recessed outer part of the end k,



but when the brake rein is pulled the U-shaped piece rocks on the pivots h, the lower part swinging forward, and is drawn up through the collar g, the points s being pressed against the horse's nose. The hollow rod p contains a spiral spring, abutting against a screw which passes through the collar g and runs in grooves in the rods p, so that the springs can be fully compressed by drawing the rods up through the collar, and when the pull on the brake rein ceases the U-shaped piece is again pushed out by the springs, and becoming vertical re-engages with the part k. The part p' may be formed in one piece with or soldered to the parts p, and the projections s may be part of the curve p' or be added afterwards.

3714. Somerset, H. F. R. F. Oct. 6.*Saddle-bars.*

—The bar A, Fig. 1, has a double joint, vertical and horizontal at C, and engages with the hook D on the arm



B, which is pinned to the arm F and is governed by the knife spring G. When the rider is thrown, pull of the stirrup-leather H disengages the parts A, B, which assume the positions seen in Fig. 2.

3747. Ord, R. A. Oct. 9.

[Provisional protection not allowed.]

Spurs.—The stem of the spur has a flat portion which enters the boot heel, and is secured by inserting a screw through a lug into the heel, or by a plate which is fixed on the heel and enters a notch in the flat portion.

Abridged also in Classes *Toys &c.*; *Wearing-apparel, Div. III.*

3932. Higson, J. R. Oct. 24.

Harness; saddles.—The saddle-tree is made of malleable cast iron, and in one piece, and consists of two bars bent to suit the horse's back and connected by cross-pieces as shown. Holes are tapped at *a, a* for screwing in the "terrets," and at *c, d* for screws fixing the saddle-piece to the tree, the screw at *d* being on the end of the bearing hook. The saddle-piece, which is also of malleable cast iron, may be riveted to the saddle-tree, on which a crupper hook *b* may be cast or riveted.

**4256. Clark, W.** Nov. 14.

[Provisional protection only.]

Horse, sheep, &c. clippers.—The invention relates to apparatus for operating-instruments for cutting human hair, clipping horses, shearing sheep, &c., in which instruments a cutter plate provided with cutting-teeth slides to and fro over the comb teeth of an under plate. An endless cord, passing over pulleys and driven by a wheel, transmits rotary motion to a horizontal pulley or pulleys placed in bearings over the person or animal to be operated on. A universal coupling is fixed to, and connects the horizontal pulley with, a tube containing a square rod which protrudes and slides telescopically in and from the lower end of the tube. A universal coupling connects the lower end of the rod with a spindle projecting from the handle of the instrument and preferably placed in front of the operator's hand, the spindle terminating in a crank pin &c. inside the handle, and, when working, giving a vibratory motion to the lever, and, through it, to the cutter plate. To operate the apparatus by electricity, electromagnets are placed inside the handle of the cutting-instrument, and are connected by insulated slack wires with the poles of a battery placed at any distance from the instrument. The magnets give, through fixed or movable armatures and a commutator, a vibratory motion to a lever connected with the cutter plate of the instrument, the latter being partly supported, by an elastic tube &c., from a hook &c. overhead. The wire is preferably passed spirally &c. through the interior of the elastic tube to the magnets.

Abridged also in Classes *Electricity &c., Divs. I. and VI.; Toilet &c.*

4289. Richardson, G. Nov. 16.

[Provisional protection only.]

Horse-collars, saddles, &c.—To prevent chafing, collars, saddles, &c. are lined with the cellular vulcanized caoutchouc called "indiarubber sponge."

4401. Sands, J. I. Nov. 22.

[Provisional protection only.]

Harness, fastening.—Relates to a self-locking pole crab, and to means for disconnecting the

harness in the event of the horses falling. The application to single harness is also described. One end of a hook is jointed to a metal frame, which is formed with an eye, or may be secured to the pole by means of straps, and the other end fits into a slot in the frame and is shut in by a clasp. The hook is further secured by a loose key working in a socket, and falling over the clasp, the key being kept in position by a pin and nut. When the crab is turned up, the key, which can be easily lifted, returns to its socket, the clasp is slipped, and the hook opens, thereby releasing the horse. For single harness, the frame may be made of iron and fitted with hook and drop key as described above.

Abridged also in Classes *Nails &c.; Road vehicles.*

4404. Thompson, W. P., [Garrich, J.]. Nov. 23.

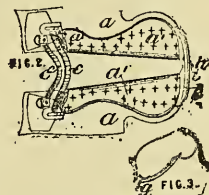
[Provisional protection only.]

Harness, fastening.—Relates to modes of fastening shafts, poles, cross-trees, and traces, whereby they can be readily detached by the coachman or some one inside the carriage, for the instant release of runaway horses. The detachable fastenings for traces consist in all cases of hinged supports for rings. In a two-horse carriage the trace rings are passed over pegs hinged to a lower fixed cross-tree. The points of the pegs are received into holes in an upper cross-tree, which can be elevated in guides fixed to the lower cross-tree by means of a rack and pinion mechanism connected with a bell-crank lever. The spreader may consist of two hinged bars, between which the trace rings are held until they are set free by releasing the locking-pin of the two bars. The trace bars may also be two pieces sliding longitudinally, one on the other. The trace rings are held by pins hinged to one piece and supported by slots in the other, until the movement of the first piece brings them opposite to gaps in the slots. In a one-horse carriage, the trace pins are hinged to an oblique bar fixed in a vertical plane below the shaft. They are locked to the shafts by small pins which may be readily withdrawn.

Abridged also in Class *Road vehicles.*

4461. Nawrocki, G. W. von, [Sperling, F.]. Nov. 27.

Saddles.—To form the framework the leather flaps, in one or more folds *a, a*, Fig. 2, to which are attached saddle pads beneath, and the shaping pads *a'* above, are united by a fore fork made of two iron cranks *c, c* subsequently covered with wood and linen cloth, and by a hind fork *b*. A crupper piece of wood covered with leather for carrying luggage, seen from the side in Fig. 3, may be attached to the hind fork by a tenon *g* inserted into the groove *i* and fastened by a binding-screw *h*. The



side pieces *a*, *a* may be of leather and india-rubber or of any pliable material, and in military saddles the crupper piece is fixed.

4498. Robinson, J., and Robinson, F. J. Nov. 29.

Clothing for animals.—Horse-cloths, counterpanes, rugs, and similar articles are woven with the

warp and weft of the pure waste of silk or nòils, which is soft spun with very little twist. The warp and weft are prepared in the same manner, but the warp may have the most torsion. The fabrics may be made plain, striped, or figured, the yarns being dyed for weaving, or the nòils may be dyed before spinning. The fabrics may also be made waterproof.

Abridged also in Classes *Spinning*; *Waterproof &c. fabrics*; *Weaving &c.*

A.D. 1878.

26 Holding, N. H. Jan. 2.

[*Provisional protection only.*]

Whips.—A hole bored in the stick or handle contains a metallic, wooden, cardboard, or other tubular or other shaped box, closed at both ends and slotted in the side. An internal shield, slotted and spring-actuated, permits matches to be delivered singly or all at once. The box is retained by a spring catch, and forced partly out by a spring at the bottom of the hole, being guided and stopped by pins working in slots in the box. Or, the box may be held partly out by a catch and retracted by a spring; or a spring on the side of the box without a catch may permit it to be moved out and in at will.

Abridged also in Classes *Fuel, Manufacture of*; *Umbrellas &c.*; *Velocipedes.*

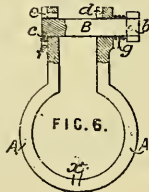
353. Tyerman, A. L. Jan. 28. *Drawings to Specification.*

Harness, fastening.—Relates to a coupling, applicable to traces. Bell-crank arms are hinged within the slotted end of a rod, and, when disengaged, the arms and rod form a Y or -|-; on being pushed home, the outer ends spread out and form a T, the side projection passing through fixed links. A collar sliding or screwed on the rod locks the arms in position, but the collar may be drawn back by means of cords or levers actuated from a distance, if desirable. The Specification states that the invention may be applied to traces.

Abridged also in Classes *Chains &c.*; *Hydraulic engineering*; *Lifting &c.*; *Railway &c. vehicles.*

442. Ramsay, F. Feb. 2.

Harness, fastening.—Refers to Specification No. 530, A.D. 1872. In the typical form shown in Fig. 6, the non-detachable bolt B has a stud *c* resting in the recess *f* which is cut across a boss at the end of the shackle arm. A spiral spring *g* retains the bolt in position. It may be replaced by a flat spring at the opposite



end of the bolt, or the shackle arms pressing outwards may act as the spring. To open the shackle, the bolt is turned half round and the stud *c* passed through the radial groove *e* into the groove *d*, both of which are between the extremity of the arm and the bolt hole. The shackle may be hinged at *x*. Forms are shown suitable for sail and brail hanks, booms and boom rings, gaff hoops, blocks or chains, masts, harness attachments, tarpaulins, doors, gates, &c.

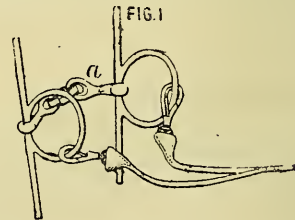
Abridged also in Classes *Chains &c.*; *Fastenings, Lock &c.*; *Fire-arms &c., Div. I.*; *Railway &c. vehicles*; *Road vehicles*; *Ships &c., Div. III.*

604. Chevillier, P. Feb. 13.

[*Provisional protection only.*]

Bridle.—A spring, attached to the nose-band by a thumb-screw or otherwise, bears two pads, that compress the horse's nostrils, on being pulled by a rein, which has branches running to the pads through rings on the bridle. The springs and pads are covered with leather, and they and the other parts mentioned are padded on the inner face. The nose-pads may be reversed so as to act from beneath.

610. Engström, A. Feb. 13.



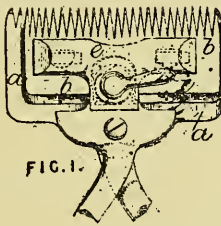
Electricity, controlling animals by.—In the arrangement shown in Fig. 1, the bit is formed of two similar metal parts *a* connected by a loop of leather or other insulating-material. Each part *a* is connected by a side bar, ring, spring swivel, and insulated wire with an induction coil. The said wires may be brought together and enclosed within

a single tube constituting a safety rein. The induction coil is actuated by a battery enclosed with it in a casing carried on the saddle or vehicle. The battery has a water-tight cover from which are suspended two carbon plates between which is placed, capable of vertical movement, a zinc plate normally maintained above the level of the exciting fluid by means of a spring. On the horse becoming restive the zinc plate is lowered by a treadle or other mechanism into the fluid, when an intermittent induced current is passed through his mouth. The spring causes the zinc plate to resume its normal position on the operator releasing the mechanism.

Abridged also in Class *Electricity &c., Div. I.*

653. Bown, W. Feb. 16.

Horse &c. clippers.—Relates to a method of securing a presser-bar to the cutter plates of the clippers, and to means for actuating the said bar so as to regulate the pressure between the plates. Two pins, with suitable heads, are screwed, riveted, or otherwise secured



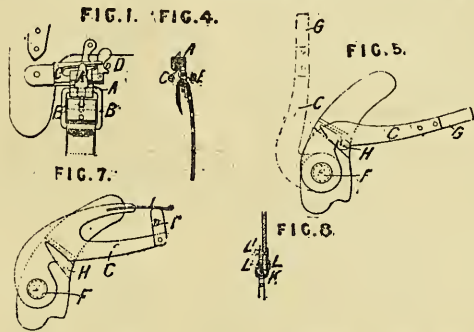
to the fixed plate *a* of the clipper. The movable cutter plate *b* is dropped over the pins. A T-shaped presser-bar *c* is then placed on the movable plate and over the pins. This presser-bar has inclined slots on the under side or extending through it, which slide in contact with inclines on the under side of the pin heads. By sliding the presser-bar, by means of a cam or an eccentric which is operated by a lever *d*, or a wing nut, the pressure between the plates is readily adjusted. As a modification, the sliding motion of the bar may be effected by the action of a wedge or conical nut, working against an incline or corresponding shape on the bottom or top side of the bar. As a further modification, instead of the above pins, T-shaped lugs may be formed with or secured to the under side of the bar and pass through slots in the bottom plate. On sliding the bar, by means of a wing nut or lever with a conical base, the lugs slide up inclines on the under side of the bottom plate.

Abridged also in Class *Toilet &c.*

1100. Huckvale, T. March 19.

Saddle-bars.—(1). The stirrup-buckle *B*, Fig. 1, is attached to the bar *C* by the hook *A* with spring front *A'*, which allows the buckle to slide off when the fall is on the other side of the horse, and when it is on the same side the spring *D* gives way and allows the stirrup-leather to slide off behind. (2). A buckle *A*, Fig. 4, hooks over the bar *C* and holds the stirrup-leather ordinarily by the downwardly-pointed tongue *B*, which lifts and allows the leather to slip off when the fall is on the other side; when on the same side the releasing action is as in (1). (3). A stirrup-bar *C*, Fig. 5, pivoted at *F* and supported by a stop *H*, releases the leather by being pulled upright as shown in dotted lines,

when the fall is on the other side, and when on the same side the leather slips over the spring *G*,



which ordinarily holds it close to the saddle. (4). The spring *G* of Fig. 5 is replaced by a jointed catch *D* held by a spring *I*, allowing the leather to escape in both positions of fall.

Stirrups.—A metal hook *K* in the section, Fig. 8, riveted to one side of the end of the leather, or with its stem inserted into a slit in the leather, holds the stirrup, which is secured by a sliding clip loop *L* prevented from moving readily by a piece of leather *L'*.

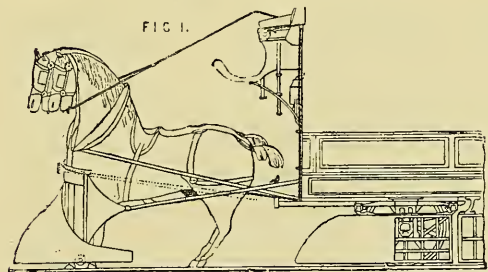
Harness, fastening.—Buckles are attached to leather straps by a riveted metal loop.

Saddle attachment for tops of boots.—Cross ridges of leather may be attached to the outside of the saddle-flaps by studs so as to hold the top of the boot and give the rider a firmer seat.

Abridged also in Class *Wearing-apparel, Div. IV.*

1184. Clark, A. M., [Folacci, F., and Orsini, E.]. March 25.

[Provisional protection only.]



Stopping runaway horses.—A padded bar, which is retained on the end of the pole by a spring, is hung in front of the horses forelegs, and by means of a chain attached to the bar and wound on a drum within reach of the driver, it may be lowered to prevent further movement of the legs. The bar may be raised again by allowing the chain to run off the drum.

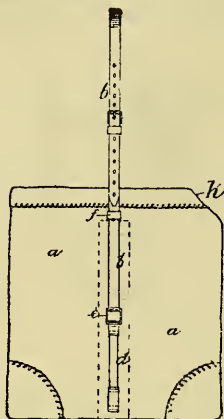
Preventing horses falling.—Two broad bands, hanging loosely, pass under the horses and are buckled to two vertical legs attached to the pole.

Horse shields or obstruction-removers.—A curvilinear guard is attached to the pole, extending nearly to the ground. It is also connected to the fore-carriage.

Abridged also in Classes *Locomotives &c.; Railway &c. vehicles; Road vehicles.*

1214. Oram, F. H. P. P. March 27.

Nosebags.—The bag *a*, Fig. 1, is contracted behind at *h* to prevent waste of food, and is made to rise as the food is consumed by an india-rubber or other spring *d* attached to the bag and forming the end of the head-strap *b* to which it is joined by the buckle *e*. The latter is prevented from rising so as to overstretch the spring by the loop *f* which acts as a stop. A piece of webbing may be sewn over the springs as shown by the dotted lines, and breathing holes, covered with curtains, may be added.

**1220. Bashford, C. B.** March 28.

[Provisional protection only.]

Nosebags.—The nosebag bears a pulley on each side, and is hung by two cords or straps attached to the head-strap and passing under the pulleys, then through a ring carried by the head-strap and rearward to a strap which unites the cords and fastens them to a part of the saddle, pad, or hames. The lowering of the horse's head raises the bag, which is prevented from descending too far by knots upon the cords behind the rings, or by other means. Leathers are placed inside the bearings of the pulleys to prevent galling the horse's cheeks.

1250. Shillington, I. F., and Hanna, J. A. March 29. *Drawings to Specification.*

Halters.—The halter may be made of solid, plaited, or twisted catgut or tharm. It is attached to the link of the tying-strap by a metal clip screwed into a taper hole in the link and compressing the rope within the clip. The tying-straps pass through holes provided in the manger and into grooved recesses underneath or over rollers to the weights attached to the ends of the straps. Across the front of the manger under the front edge is carried a metal bar on which is a ring. The halter is attached to the ring, which is free to slide the whole length of the rod.

Abridged also in *Classes Buildings &c.; Drains &c.*

1621. Graham, G. April 23.

[Provisional protection only.]

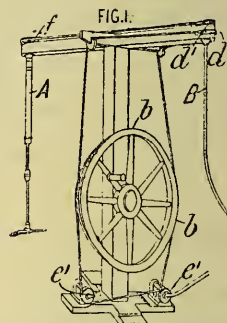
Harness, fastening.—Relates to means for disconnecting the traces from splinter-bars in the event of the horse or horses falling. Hollow caps are fitted on the ends of the splinter bar, and are slotted to receive the roller bolts, the latter being retained within the caps by sliding bolts furnished with studs which are engaged by the slots of

two levers fitted on the caps. By moving the levers, which may also be connected together, both roller bolts are released.

Abridged also in *Class Road vehicles.*

1758. Clark, W. May 2.

Horse clippers and the like.—Within the handle of the instrument is formed an air tube and piston, the rod of which is connected with the throw pin driving the cutter plate. The admission of air to the tube, which is connected by a flexible tube with an air pump, is regulated by valves, moved by hand or automatically.



Hairdressers' clippers.—To the under side of the fixed plate is fitted an under plate, of sheet steel, which is pressed against the head of the person so that the length of hair left thereon is determined by the thickness of the plate. A bottom comb of ivory or other suitable material may be attached to this metal plate.

Abridged also in *Classes Agricultural appliances, Farmyard &c.; Animal-power engines &c.; Toilet &c.*

1773. Jensen, P., [Delisle, R. H.]. May

[Provisional protection only.]

Halters or bridles.—A loose metal ring runs freely on the looped rear part of the nose-piece, and is linked to the latter part by a loop through which passes a cord attached to the head-piece. When the halter cord, which is fastened to the back end of the looped nose-piece, is pulled, the ring travels up the loop and compresses the animal's nose.

1897. Edmonds, E., [Leloup, A.]. May 11.

[Provisional protection only.]

Whips.—Relates to a fan in combination with umbrella handles, walking sticks, whip handles, and other similar articles. The fan is jointed to the interior of the handle of the umbrella &c. by means of a bell-crank lever mechanism. In the handle is a groove or recess to receive the fan when folded up; also a grooved socket, which turns on the handle and conceals the fan when folded up. The fan consists of a frame with three branches, two of which fold over on to the middle one. The whole of the fan is by a circular movement on its joint lodged in the groove of the handle, and the socket being turned conceals the fan and also the detent which puts it in action. To open the fan, the socket is turned until its groove is directly over the groove in the handle; the folded fan then emerges, turning on the joint, and at the same time opens out by means of springs interposed between the

branches. The detent "comes out and remains at an angle to the handle for operating the fanning movement." Pressure on the detent "causes the fan to describe an arc," and a "spiral spring in a cylinder returns it to its seat."

Abridged also in Classes *Umbrellas &c.*; *Wearing-apparel*, Div. IV.

1982. Eglington, F. May 17.

[Provisional protection only.]

Shaft tugs.—The shaft tug is of metal covered with leather, and made in two parts hinged at the bottom. The top of the outside part bears a loosely-pivoted buckle which engages with the back band, and below this are a stud and one or more metal loops movable on their pivots. A strap attached to the upper end of the inside part is passed through the buckle below its tongue-bar, and through the loops, till a perforation in it engages with the stud, when the loops are pressed down upon it. The bellyband is secured to the end of this strap.

1999. Langshaw, P. C. May 18.

Dog leashes.—Relates to a hook attached to a leash for retaining dogs or other animals and releasing them at will. The front part *b* of the hook is hinged to the shank *a* and held in its closed position by the spring link *d'*, which is also hinged to the shank. A pull on the cord *h* withdraws the link and so releases the hook; a swivel *k* prevents derangement of the hook in case of the animal twisting round. The Provisional Specification states that the invention is applicable for coupling other bodies having contrary forces and requiring to be released at will.



Abridged also in Class *Nails &c.*

2006. Sladdin, W. H. May 18.

[Provisional protection only.]

Clothing for animals.—Relates to a covering for the bodies of military, naval, or other men, to protect them from cartridges, bullets, and other projectiles; applicable also as a covering for horses, camels, and other animals. Fine wire is twisted together to form a small coil, which is then woven by hand or machinery into a vest or other covering. At those points where the wires cross or intersect each other, knots are made, forming projections which strengthen the garment.

Abridged also in Class *Wearing-apparel*, Div. II.

2032. Morrison, L. I. May 21.

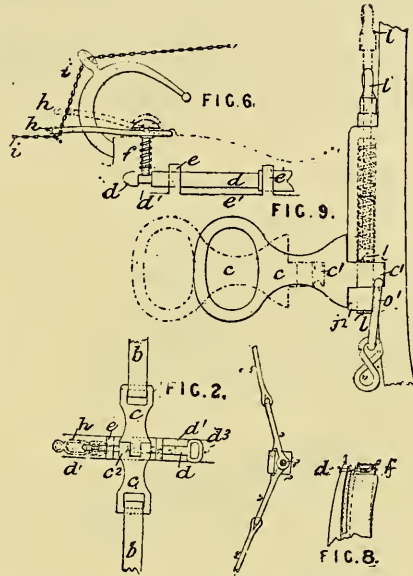
[Provisional protection only.]

Whip and sunshade combined.—The handle of a riding whip is hollow and in it is inserted a tube

containing a piece of stiff fabric, folded and fitted in such a way that when the tube is drawn out the fabric opens out like a fan and may be used as a protection against sun or wind. The tube may be retained in the handle by a catch and be automatically pushed out by a spring when the catch is released.

Abridged also in Classes *Umbrellas &c.*; *Wearing-apparel*, Div. IV.

2179. Kosminski, M. May 31.



Harness, fastening.—The two parts of the back-band *b, b*, Fig. 2, are united by the plates *c, c*, which are locked together by a bolt *d* passing through holes in the parts *c', c^2*. The loop *d^3* forms the crupper loop, and the part *d* passes through lugs *e* standing on a plate *e^1*, being secured at the neck *d^1* by a spring stud *f*, which may be withdrawn by hand or by a chain *i*, Fig. 6, attached through a ring on a prolongation of the lever *h* to the latter, which raises the stud as shown in dotted lines. In the trace fastening a continuation of the chain *i* runs through a loop at the top of the collar and ends at, and can withdraw the spring bolt *l*, Fig. 9, which passes through and holds the eye-piece *c^1* of the trace loop *c* attached to the hames *j*. The chain *i* may withdraw the spring catch *f*, Fig. 8, from the bolt *d* which holds the hames together, and similar means, aided by a lever turning on an axis, may secure the collar which is hinged beneath. The chain *i* may have stops so as to release the traces, hames, and back band in succession. A link *a^1*, Fig. 9, held on the part *j^2* by the eye *c^1* is attached by side chains, a link below the hames, and a central chain to the pole, these attachments being released simultaneously with the traces.

2313. Stewart, A. June 8.

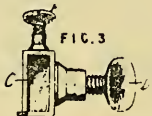
[Provisional protection only.]

Saddles, ladies'.—To prevent chafing the withers, the side bars of the saddle-tree are united by an

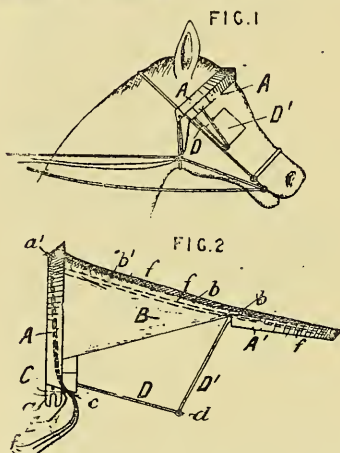
iron bridge quite behind the withers, and the off-head rises from the upper surface of the bar, the pommel and gullet being dispensed with.

2383. Gedge, W. E., [*Masson, A.*]. June 15.
[Provisional protection only.]

Bridles.—The reins are united exactly in the middle by being passed through the open ends C of a bronze or metal box and secured by the screw D so that if they slip through the hands they are stopped by the box without causing the horse to swerve. The clip may open on a hinge, and is then closed by a screw F or any other fastening.



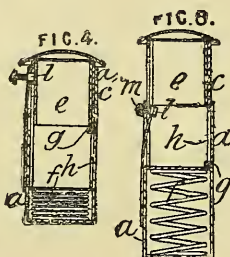
2431. Barlow, W. A., [*Rice, B.*]. June 18.



Bridles.—Two arcs A, A', Figs. 1 and 2, are fixed to the bridle by ears or hooks a and connected by a curtain on which are several rows of rings b, b', through which cords f for drawing up the curtain run from the lower arc A', through rings in the upper arc, and then sideways through a ring c where they are secured by a spring clip. The arcs are supported on arms D, D' pivoted on a bolt d, fitted with a spring tending to open the arms. The clip at c on the cords f counteracts this keeping up the curtain, except when the clip is released by a rein E. When raised, the blind is hidden between the two arcs.

2634. Holding, N. H. July 1.

Whips.—Relates to a receptacle for matches &c., applicable to whips, walking sticks, &c. The whip handle is hollowed and receives a box a within which slides a box c, guided and limited in its movements by a pin g in a slot h or its equivalent. When a spring catch l, m is pressed inwards, the box c

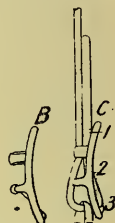


is driven upwards by a spring f, and a shield e working telescopically in the box c can be pushed down to open the side of the box. To close the box, the projecting part is merely pressed down till it is secured by the catch l.

Abridged also in Classes *Fuel, Manufacture of; Toys &c.; Umbrellas &c.; Velocipedes.*

2830. Gedge, W. E., [*Gaches, P. P.*]. July 16.

Stirrup leathers.—The stirrup is suspended by a single strap, having at its upper end a loop fastened to the usual spring-bar on the saddle. At the lower end of the strap are holes 1, 2, 3, &c. for adjusting the length of the leather, one of these holes being engaged by the tongue of a specially-shaped buckle C which secures the stirrup to the leather and which is shown detached at B.



Abridged also in Class *Wearing-apparel, Dir. IV.*

2857. Davis, W. R. July 17.

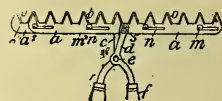
[Provisional protection only.]

Whips.—Air guns, such as are used in the game of "puff-and-dart," are combined with umbrellas, parasols, walking sticks, or riding-whips. The greater portion of the stick is made tubular, and lined with brass tubing, and the tube has a brass ferrule ending in a male screw which fits into a female screw in a ferrule on the solid part of the stick. The handle end has a cupped mouthpiece into which a cap is fitted, when the tube is not in use as an air gun. In the case of a riding-whip, the handle only is tubular. The dart used has a tail of vulcanized rubber in the form of a hollow cone, widening out behind.

Abridged also in Classes *Toys &c.; Umbrellas &c.*

2919. Ridgway, A. July 22.

Horse &c. clippers.—The top plate a is provided with cutting-teeth b. It is connected by a compound stud s, working in a slot, to the handle d, f. The lower plate a' is provided with barbed or serrated teeth b', and is connected to the handle c, h. The handles are connected together by a pin e. The plates are held together by studs m fixed to the lower plate. These studs pass through slots in the top plate, and their top parts project over the top plate. The plates are oscillated over each other by the motion of the handles. The oscillating movement may be produced by rack gear.

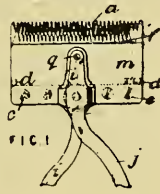


Abridged also in Classes *Agricultural appliances for the treatment of land &c.; Toilet &c.*

2987. Casile, F. A., and Boutet, L.
July 27.

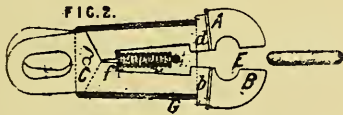
Horse, sheep, &c. clippers.—The pressure is regulated by means of a screw *q* which acts upon a cover-plate *m*, placed over the movable cutter-plate *f*. The curved upper edge of the cover-plate *m* enters a groove in the movable cutter, and guides its movement. In order to limit the stroke, the comb-carrier is made in one piece with the fixed handle *i*, and the fixed plate *a* is secured thereto by means of screws. Projections *d, d* on the comb-carrier limit the stroke of the movable cutter *f*. The piece *i* which operates the movable comb is formed integral with the movable handle.

Abridged also in Class *Toilet &c.*

**3183. Wirth, F., [Oswald, J.].** Aug. 12.

[Provisional protection only.]

Stopping runaway horses &c.—Beneath the horse are attached on each side of the bellyband two levers, one in front of the other, the hind and front pair being connected respectively by a strap under the belly and by one in front of the fore legs, each two on the same side being also joined to a common strap leading to the vehicle. Tightening these straps by hand or mechanism in the vehicle draws down the front connecting-strap on the animal's fore legs and hampers their action.

3186. Kingston, F. Aug. 12.

Harness, fastening.—Relates to a slip link for fastening traces &c. To close the link, the jaws *A* and *B*, Fig. 2, pivoted at *C*, are pressed together, when the coiled spring *F*, acting on a pin which passes through the other sides (not shown) of the sheath *G*, pushes the sheath over the shoulders *d* and *b*. To open it, the sheath is drawn down, when the bent blade spring *f* is compressed by the coiled spring and opens the jaws, the sheath being retained below the shoulders as shown.

Abridged also in Classes *Chains &c.*; *Nails &c.*; *Ropes &c.*

3219. Church, R. Aug. 14.

[Provisional protection only.]

Whips.—Relates to handles for umbrellas, walking sticks, riding whips, and hunting-crops; also applicable to fishing rods. The handle is made of metal or other suitable material, preferably of a conical form externally, and fixed to the stem by a socket or ferrule screw-joint or otherwise. The upper part of the handle is hollowed cylindrically to contain

matches &c., and the hollow is closed at the end by a hinged lid or cap secured by a spring cap or otherwise, or is closed at the side by a hinged or sliding door.

Abridged also in Classes *Boxes &c.*; *Fish &c.*; *Fuel, Manufacture of*; *Umbrellas &c.*

3345. Lake, H. H., [Woods, E. P., Sherwood, D., and Latham, C. H.]. Aug. 24.

Bits.—Wire is used to construct bits, stands, frames, racks, and other articles, which may be finished by immersion in melted tin.

Abridged also in Classes *Artists' instruments &c.*; *Boxes &c.*; *Cooking &c.*; *Furniture &c.*; *Table articles &c.*; *Toilet &c.*; *Washing &c.*; *Writing-instruments &c.*

3346. Brewer, E. G., [Bastien, J. B.].
Aug. 24. *Drawings to Specification.*

Relates to ladder-like apparatus and harness for use therewith applied to various purposes. The ladders may be combined together to produce the desired results, may be of flexible or rigid material, and the crosspieces and uprights may be straight or curved or bent to any suitable shape, and one or both may be "extensible," i.e. formed of elastic material. The connections between the uprights and crosspieces may be made by means of pivots, hinges, or other movable or fixed joints, and where several ladders are employed they may be connected together by jointing or interlacing &c. They are generally arranged so as to be disconnectible to form convertible articles. Where curved wood is employed its elasticity may be taken advantage of to secure the ladders together without joints or other fastenings. In all cases the ladders may be covered with any desired material or may be left bare. The harness consists principally of means for securing the ladders in any required position or to any article or person. The system of ladders are all marked with a graduated scale to facilitate their use. The ladder may be attached either temporarily or permanently to harness.

Abridged also in Classes *Aeronautics*; *Agricultural appliances for the treatment of land &c.*; *Artists' instruments &c.*; *Buildings &c.*; *Closets &c.*; *Fire-arms &c., Div. I.*; *Fish &c.*; *Furniture &c.*; *Hand tools &c.*; *Life-saving &c.*; *Lifting &c.*; *Medicine &c.*; *Photography*; *Registering &c.*; *Road vehicles*; *Ships &c., Divs. I. and II.*; *Shop &c. accessories*; *Toys &c.*; *Trunks &c.*; *Umbrellas &c.*; *Wearing-apparel, Div. II.*; *Writing-instruments &c.*

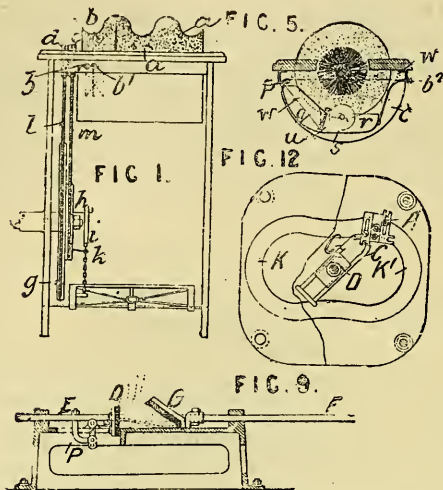
3348. Le Maistre, F., and Jones, W. J.
Aug. 24.

[Provisional protection only.]

Nosebags.—The bag may be made of india-rubber or canvas, or a mixture of the two, or of any suitable material, and, if of india-rubber, may be moulded. A ridge of the same or different material is attached all or partly round the inside of the

mouth; ventilation may be effected by small holes or ventilating-buttons, and strengthening by attaching an extra thickness of material to the bottom.

3424. Clark, A. M., [*Audoye, P. P.*].
Aug. 29.



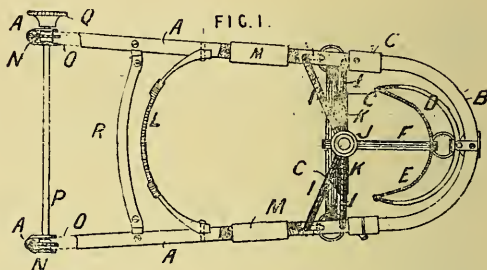
Cleaning, blacking, and polishing harness &c.—

Fig. 1 shows one form of machine, in which two brushes *a*, *a*, and *b* are mounted on solid and tubular spindles respectively, which spindles have a common axis, but are rotated at different speeds through the treadle mechanism *i*, endless bands *l*, *m*, and pulleys *g*, *k*, *d*, *c*. The brush *a*, *a* is for cleaning and polishing, and the brush *b* for applying the blacking, which is fed to it from a roller *s*, Fig. 5, mounted in a trough hinged at *p* and raised through an arm and a handle. The trough is divided into two compartments *q*, *r*, the blacking being contained in the compartment *q* whence it passes into the compartment *r* through a door *u* opened by means of a cord. In a second form of machine, a flat brush, having an undulating surface, receives a reciprocating motion through treadle mechanism and a crank and connecting-rod. Another form of machine for polishing boots whilst on the feet is shown in Fig. 9. A brush *G* for blacking the top and sides of the boot is mounted in a rectangular frame *E*, reciprocated by a rod *F* receiving motion through a crank and connecting-rod. A curved brush *D* for blacking the heel is carried by a cranked lever receiving motion from the frame *E* through a rod *P*. Any number of sets of brushes may be employed, arranged in pairs for polishing both boots at once. Fig. 12 shows a plan view of another form of machine, in which the brushes are hinged to a head *A* caused to travel around the boot by slots *K*, *K*¹. The vertical spindle, to which the head *A* is attached, is carried by two forked arms *C* embracing blocks fixed on the main central spindle *D*. The brushes are brought into work separately and they are caused to follow the contour of the boot by means of springs, and they may be formed of pieces jointed together. The blacking-brush is supplied with blacking from a

perforated receptacle which it rubs in passing. An auxiliary brush may be provided for operating on the boot heel. A modification is shown and described in which the brush-head is formed of a serrated disc adjustably connected to its spindle by a forked arm. The brushes are jointed and held straight by lugs engaging a notched disc; the head may be rotated by gearing with a fixed toothed segment to release the lugs from the disc and allow springs to bend over the jointed parts of the brushes. The back of the blacking-brush is made hollow to contain blacking.

Abridged also in Classes *Washing &c.*; *Wearing-apparel*, Div. III.

3757. Clark, A. M., [*Boynton, R. B.*].
Sept. 23.



Harness fixed to shafts.—A bow *B*, Fig. 1, hinged to the fore end of one shaft and secured to the other by a swivel nut *C* or other fastening, bears both an attachment below for the martingale strap *F* through the loop of which the belly-band *G* passes, and also, pivoted on its centre, a yoke *D* with a strap *E* fixed to its ends which receives the pressure of the horse's breast in drawing. Two arched bars *I* rise from each side of the shaft and pass over the horses neck, a button or ornament *J* being placed where they meet, and a strap *K* attached to the front pair supports the shafts on the horse's neck. A padded steel bar *L*, serving to hold back the load, is attached to the shafts, which are connected by the bar *R*, and are in two parts, screwing into a long nut *M*, by turning which their lengths can be altered. The hollow rear ends of the shafts are bent down vertically and receive tongues *N* from the axle, which bear rack teeth gearing with toothed wheels *O* in the shafts, by which the latter can be adjusted to the size of the horse, and pins in the tongues, working in slots behind the shafts, limit the motion of the tongues in the shafts. The shafts may be pivoted on the axle.

Abridged also in Class *Road vehicles*.

3771. Clark, A. M., [*Folacci, F., and Orsini, E.*]. Sept. 24.

[*Provisional protection only.*]

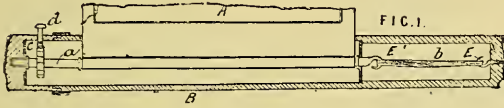
Stopping runaway horses.—A padded bar, suspended by a spring from the pole, before the horses' legs, can be caused to fall and stop the horses by a chain running from its under part along the pole and wound on a small barrel with a handle near the driver. The bar is raised by the

spring on allowing the chain to run off the barrel by releasing a pin. The apparatus can be applied to single-horse vehicles.

Preventing horses from falling.—Two vertical struts of the height of the horses are attached to the pole near the fore and hind legs and to them are fixed, by buckles, bands about 8 inches wide which afford support in stumbling, but at other times hang free.

Abridged also in Classes *Locomotives &c.*; *Railway &c. vehicles*; *Road vehicles*.

3802. Barlow, W. A., [*Borghst, A. van der*].
Sept. 26.



Whips &c.—In the hollow slotted stick B of a whip, or umbrella &c., is mounted an axis a capable of rotating freely, to which is attached a map or chart A. The chart is wound on the axis a by means of an elastic band b, attached to a hook E¹ on the axis and to a fixed hook E at the end of the hollow. Instead of an elastic band, a spiral spring may be used. The map is held, when unrolled, by means of a catch c consisting of a ratchet-wheel and a push-button d. Instead of a rotary axis a, the map may be mounted on a rod attached to a handle which will screw on and off the stick. The map may be replaced by tables of cab fares &c.

Abridged also in Classes *Umbrellas &c.*; *Writing-instruments &c.*

4115. Heap, J. Oct. 16.



Harness fastening.—Fastener for driving belts and bands, and for other straps and bands; applicable to harness and saddlery. Bent limbs of wire a¹ connected by a cross-piece a are passed through holes in the over-lapping portions of the belt b. The fastener is prevented from shifting by the tension, the limbs being forced against the belt. Two or more fasteners may be used. In a modification, a single arm terminates in a curved foot which passes through and re-enters the belt.

Abridged also in Classes *Fastenings*, *Lock &c.*; *Mechanism &c.*; *Nails &c.*

4281. Peirce, J. W. Oct. 25.

[*Provisional protection only.*]

Traces.—To prevent a sudden strain, especially on the spring already provided for the same purpose, a D-shaped swivel has the curved part prolonged into two parallel-bars with steps near their

middle. A pin bearing a spring, and passing through that end of the swivel which the parallel-bars join, has at one end an eye and at the other a nut which slides in the parallel-bars, and is stopped by the steps, preventing overstrain of the spring, which may be of coil or other form.

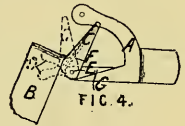
4308. Walsh, F. B. Oct. 26.

[*Provisional protection only.*]

Collars, neck.—Relates to a machine for the manufacture of collars. A guide rod, fixed longitudinally in a suitable framework, has sliding on one end of it a tube with a longitudinal slot throughout its upper surface, in which slot the sewn margin of the collar rim is placed, leaving the rim to be filled open and above the rod. A tube of less diameter than the rim is fixed on the other end of the rod and the first tube is made to slide the rim over the second tube, through which a plunger punches the filling-material in doubled tufts into the rim. The material is contained in a socket at the outer bell-shaped mouth of the second tube and the rim moves back as it is filled. The machine can be adjusted to suit rims of various thicknesses.

4364. Barnsby, J. A. Nov. 29.

Saddle-bars.—The stirrup leather B, Fig. 4, is passed over the short arm D of a lever C D hinged to the saddle-bar A by the pivot E, and rests on the long arm C which becomes horizontal, and fits on the part



G of the fixed arm of the saddle-bar by flanges, or takes into the arm, or comes with a plane surface upon it. Extra space may be left between the lower arm of the bar and the upper arm, which may be curved to guide the stirrup-leather to the higher part of the arm D, and free it by turning the lever when there is a fall. The arm D may be shaped so that the edge of the stirrup-leather alone will not operate the lever, which may also be prevented from turning too easily by a spring F.

4382. Savage, R. Nov. 30.

[*Provisional protection only.*]

Horse &c. clippers.—Relates to apparatus for driving horse &c. clippers, having rotary or reciprocating toothed cutter-plates, or for giving motion to other instruments. An endless cord passes round a horizontal pulley, which gives motion to an eccentric pin actuating the cutters, and around a set of guide-pulleys, which are supported by a swivel radial arm on the axis of the horizontal pulley. The cord then passes round a series of guide-pulleys, supported in a swivelling and oscillating frame, and two larger guide-pulleys. It then passes around the V-grooved periphery of a large driving-wheel and a weighted pulley-block which maintains its tension. The apparatus may be applied to a portable frame or a series of drivers may be fixed

up in a barn &c. and driven either independently or separately by means of clutch gearing.

Abridged also in Classes *Brushing &c.*; *Mechanism &c.*; *Metals, Cutting &c.*; *Toilet &c.*

5290. Haddan, H. J., [*Vernier, F.*]. Dec. 27.

[*Provisional protection only.*]

Trace attachments.—A frame of malleable cast iron or other metal, with two parallel discs

connected by two side bars, is enclosed by a casing of two half-cylindrical plates. One disc is circular and perforated by an opening, through which a cylindrical spindle with a hook or ring at the outer end slides freely, while near the inner end a washer and pin press on the end of a copper or steel spring surrounding the spindle and resting on the circular disc. The other disc is hollowed to receive the end of the spindle and ends in a ring with or without a link. The spindle is grooved to prevent its turning in the discs, to which the ends of the spring are made nearly parallel.

A.D. 1879.

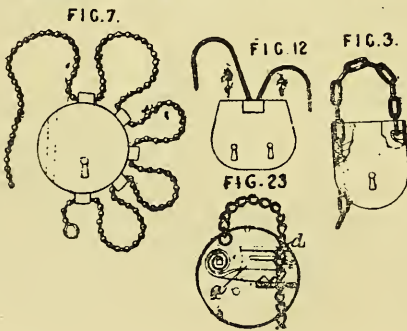
6. Wilson, J. G., [*Wendes & Co.*]. Jan. 1.

[*Provisional protection only.*]

Harness, fastening.—A safety hook is provided with a hinged latch opening inwards and closed by a spiral spring fixed in the boss of the hook.

Abridged also in Class *Nails &c.*

213. Lake, W. R., [*Fetter, J.*]. Jan. 18.



Combined padlock and chain for fastening horses and cattle to posts &c.—Instead of the ordinary shackle, one or more flexible chains, cords, or bands are used. In one form, Fig. 3, one end of the chain is fixed and the other passes through the case and is locked at any part of its length. Some of the modifications are shown in the annexed Figs. The chain may slide through another channel in the

case until stopped by a terminal ring or button, or pass through one or more rings on the case, Fig. 7, or through two or more padlocks so as to hold several articles at once. A double padlock may be used to fasten two chains or the two ends of one chain, Fig. 12. An ordinary padlock may be adapted without removing the shackle by forming a channel for the chain, both shackle and chain being locked by the same bolt. In Fig. 23, *d* is a projection against which the chain is held by the bolt *a*.

Abridged also in Class *Fastenings, Lock &c.*

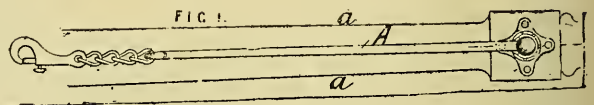
270. Bussey, G. G. Jan. 22.

Stirrup-leathers.—Springs suitable for stirrup-leathers and other useful purposes. These springs are suitable for nearly every purpose to which tension springs can be applied; they are of any required shape, size, and strength, and spiral, with the coils set well apart. Through the inside of the coils two straps, webs, or cords, are passed, and one end of each is fastened to the last coil at each end. An effective tension spring is produced by pulling the straps in opposite directions, resulting from the effort of the spiral spring to recover its normal expanded state. The spring should be made of the best spring steel properly hardened and tempered.

Abridged also in Classes *Fastenings, Lock &c.*; *Furniture &c.*; *Hinges &c.*; *Mechanism &c.*; *Toys &c.*; *Wearing-apparel, Divs. II. and IV.*; *Weighing-apparatus.*

396. Clark, A. M., [*Frost, S.*]. Jan. 30.

Hitching-appliances.—The taper bar *A*, provided at its free end with means for its attachment to the bit, is jointed to the rigid support *a*. The form of joint shown is ball and socket, the socket being grooved to allow of the bar dropping when not in use. Other forms of joints are shown.



1303. Watson, R. April 2.

[Provisional protection only.]

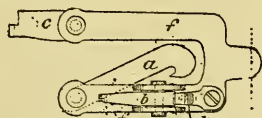
Reins, traces, straps, and bands are made of tempered flat steel covered with, or enclosed by, thin leather.

Abridged also in Classes *Mechanism &c.*; *Railway &c. vehicles*; *Ropes &c.*; *Spinning*; *Wearing-apparel*, Div. IV.

1389. Morris, C. F. C. April 8.*Harness, fastening.*—

Consists of a frame *f* with a pivoted cross-piece *c*, which by an arrangement of catch levers *a, b* and spring *d* is held securely when the weight or pull is required to be sustained, and which may be readily released or uncoupled by lifting the lever *b*. The Provisional Specification states that this slip shackle, when used by itself, may be applied to detaching harness &c.

Abridged also in Classes *Chains &c.*; *Nails &c.*; *Road vehicles*.

**1543. Tergolina, Count V. di.** April 19.

[Provisional protection only.]

Bits.—The mouth bar is in one piece with ends screwing into the cheek pieces and with bolt attachment or other fasteners, or if the bar is hinged the play of the parts is limited by a stop; and the cheek plates are lengthened to prevent biting.

Bridles.—The nose band is a metal chain with a cover of leather or other material made larger than the chain. Each rein is forked, one branch being fitted to the bit at about the level of the mouth bar and the other at the level of the nose-band.

1695. Henderson, A. C., [Poullain, E., and Poullain, C.]. April 30. *Drawings to Specification.*

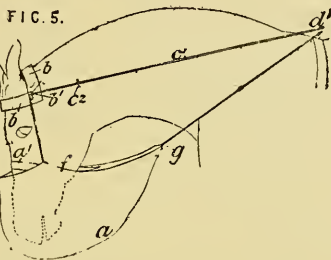
Traces and articles of saddlery.—Belts of leather india-rubber, gutta-percha, or like material consist of any number of layers, united by glue &c. or by sewing, riveting, &c. To secure greater adhesion, the surfaces of the various layers are provided by means of presses or rollers with grooves, preferably longitudinal, though in some cases parts are left plain. The edges may be notched or indented for the same purpose. The bands having been thoroughly stretched by this treatment are not liable to further stretching. The presses and rollers used in grooving may be provided with plain surfaces for glazing. Ornamental grooves may be produced in the same way.

Abridged also in Classes *Leather*; *Mechanism &c.*; *Printing other than letterpress &c.*; *Spinning*.

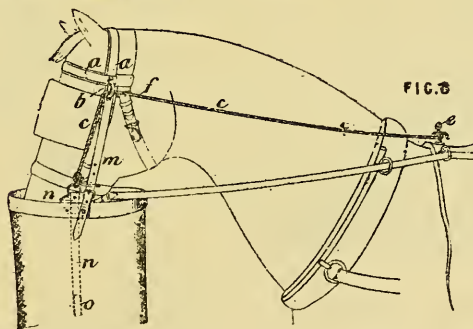
1725. Mason, D., Mason, R., Mason, E. K., and Jones, T. May 1.

[Provisional protection only.]

Saddles.—A metal plate fixed to the saddle tree carries a socket containing one or more springs to the hooked ends of which the girth is connected.

1747. Barrington, Kennett V. H. B. May 2.

Nosebags.—The bag *a*, Fig. 5, is hung by cords which pass through rings or pulleys *b'* on the head piece *b*, and are attached to the saddle, girth, or harness by a hook *d'*, their length being adjusted at *d'* or by a buckle at *c'*. A movable stop *c'* limits the fall of the bag when the horse's head is raised, and the band *a'* keeps it from its nose. The bag may be of the ordinary cylindrical shape or, as in Fig. 5, with a backward extension, from which the food is gradually tilted forward as needed, by the movement of the horse's head, and the cord may be attached at the top by a hook at *f* which can be fastened to the bit, or may pass through rings and be fixed to the sides or bottom of the bag so that the upper part collapses as the food is eaten.

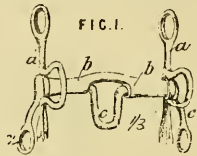
1841. Bligh, N. V. May 8.

Nosebags.—Cords *c*, Fig. 8, carried by hooks on the head gear, or by thimbles *b* on the cross strap *a*, are attached to the hook *e*, and by a ring to the strap *n* fixed to the bag at *o*. The strap *m* which forms part of the cross strap prevents withdrawal of the horse's head, and supports the bag, or it may be dispensed with, a stop at *f* enabling the cords *c* to act as the support. If the blinkers catch on the edge of the bag when the food is low, the upper part will be pushed down with the arrangement

shown in the Fig., as also when the strap *m* is removed, if the strap *n* is made to run from *o* through the ring as shown and is attached to the edge of the bag; or an elastic tab, or an inelastic one adjusted by hand, may be attached similarly to and alongside the strap *n* so as to raise the bag when the weight decreases.

2470. Smissen, Baron E. L. A. G. V., [Witowsky, A. de.]. June 20.

Bits.—The usual cheek pieces *a*, Fig. 1, are attached to a tubular mouthpiece *b* through which passes an inner bit consisting of a bent tongue *c* projecting into the mouth and connected by screws to two straight pieces in the hollow parts *b*, *b'* continuous with the arms *c'* to which a pair of reins are attached. Tightening these reins presses the tongue *c* on the horse's mouth by rotating the inner bit, the screws being so arranged as to be tightened by the rotation.

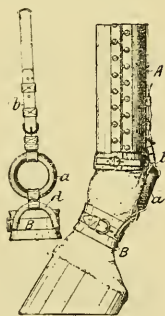


2500. Clark, A. M., [Forbes, E.]. June 21.
[Provisional protection only.]

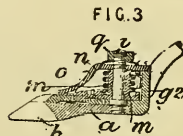
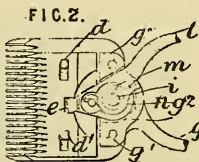
Nosebags.—Supporting nosebags so as not to interfere with the movement of the horse's head. A removable spring arm, adapted for connection to the upper part of the hames, has its outer end extending over the horse's head, and from it the feed bag, which is provided with flexible handles, is suspended.

2601. Nawrocki, G. W. von, [Lehmann, H., and Birendt, A.]. June 27.

Horse-boots.—To prevent undue stretching of a horse's sinews, an india-rubber ring *a* is buckled on as shown to the ankle boot *A* in the direction of the back sinews, and is also secured by a link *d* to the strap *B*. The ring may be replaced by an elastic bar or piece of other form, and other elastic material may be used.



2804. Sharpe, L., [Carleton, C.]. July 9.



Horse &c. clippers.—For clipping small animals and parts difficult of access of larger animals; also particularly designed for hairdressers. The front

portion *b*, Fig. 3, of the under-comb plate *a* is thicker than the rear portion, and the under surface is curved, as shown. The teeth of the comb plate are long and are hardened so as to secure a good cutting-edge, but the points are annealed to a spring temper to prevent injury in use. The upper cutter plate has a bearing all over the under comb plate. The operating-handle *l*, Fig. 2, has a cam piece, which enters a hole *e* in the cutter plate, and is also provided with a sleeve *m* which works on a pin *i*, Fig. 3, screwed to the comb plate *a*. The operating-handle is moved by hand in one direction and is returned by the action of a spiral spring *n*, one end of which bears against it and the other is fixed to the comb plate. Adjustment of the pressure between the cutters is effected by the cover *O* pressing on the top cutter plate and being adjusted by the nut and spring washer *g*. Pins *d*, Fig. 2, secured to the comb plate and moving in slots in the top cutter plate limit the stroke of the cutters. A plate *g*¹, Fig. 2, is secured, by means of screws, to the comb plate and has a curved rim *g*² which carries the fixed handle *g*. Both the handles *g*, *l* are provided with thumb and finger rests. The working parts are enclosed by a cover *O*, Fig. 3, part of which rests on the top of the curved rim *g*². The cover is secured by a nut and spring washer.

Abridged also in Class Toilet &c.

2853. Court, C. July 12.

Nosebags.—Reins or cords, preferably round, pass through rings or sail thimbles attached to each side of a headstrap or to the bridle, and are fixed to the nosebag, their other ends being united by a buckle and secured to the saddle or harness. The ends of the cords may form part of the harness, being attached to and freed from the bag by spring hooks or buckles, and a strap may be fixed to each side of the head gear passing across the throat.

2881. Clark, W. July 15.

[Provisional protection only.]

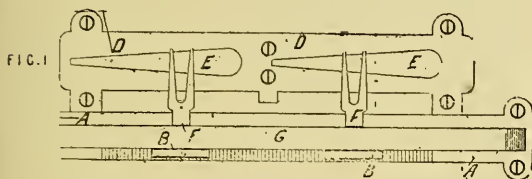
Horse &c. clippers.—In a clipper for animals the reciprocating under comb plate is made thin and its teeth are deepened, so as to protrude like ribs beneath the under surface of the plate. The depth of the teeth thus regulates the thickness of hair cut. For cutting human hair and for use as a substitute for razors, the under comb plate is reduced in thickness so as to leave the teeth so fine that the short hairs of the skin will protrude and be subjected to the action of the upper cutter plate.

Abridged also in Class Toilet &c.

2924. Elliott, S. July 18.

Apparatus for cleaning bits, stirrups, buckles, &c.—A metal base-plate *A*, Fig. 1, has another plate *G* fixed above it so as to leave between them a space of about half an inch in which slide the wide bases of two forks *F*, which are cranked so as to stand

out about three inches from the plates. The parts B of the bases are flanged up against the plate G.



and have on their under sides toothed projections which fix the forks by taking into grooves that are cut about $\frac{1}{8}$ inch deep at the lower edge of the plate A and taper up to its surface $\frac{3}{4}$ inch from the edge. From a shorter base plate D fixed centrally over and a little above the plate A rise two rounded tapering hocks E, E, which spring from, and take a direction parallel to, and about $\frac{3}{4}$ inch from it. A groove between the plates A and D allows articles to be easily moved along, and the whole apparatus is fixed to a wooden tablet or to the wall of the stable.

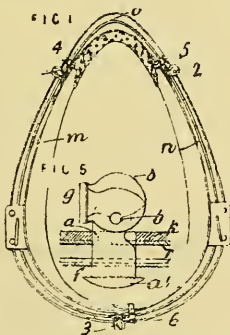
3128. Bastand, C. Aug. 1.

[Provisional protection only.]

Nosebags.—Buckle-shaped devices, attached by a head-strap to each side of the horse's head, have fixed to them the nosebag straps, and also carry small rollers over which pass cords or chains, that are fixed at one end to the sides of the nosebag and at the other to the harness on or behind the horse's shoulder.

3173. Kessler, C., [Dehmlow, J., and Möllhausen, G.]. Aug. 7.

Collars, neck.—The hames are made up of three bent steel rails, concave in cross section, the two rails m, n, Fig. 1, forming the side parts, united below at 3, while the upper one o is joined to them at 1, 2, the ends being sufficiently long to overlap when the collar is of the largest size. The overlappings ends r, r, Fig. 5, together with the strengthening metal bar k and a toothed steel bar f fixed to the hame on the opposite side, are perforated by a steel bar a bearing a tipping-plate b which, when turned, brings the teeth of the head a' to fit against those of the plate f, and also the base g upon the plate k, clamping the hame ends together. The slot through which the bar a passes is made so as to allow the bar to slide along it lengthwise. The collar pads may be, as shown in Fig. 1, in three overlapping divisions corresponding to those of the hames, to which they may be sewn, and the ends may be secured by buckled straps 4, 5, 6.



3175. Amrhein, A. Aug. 7.

[Provisional protection only.]

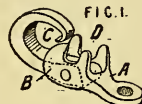
Harness, fastening.—Means for releasing traces and pole-chains when horses are restive. The loops of the traces are passed into openings in the splinter-bar and are held by vertical pins projecting through these holes and carried by a plate above the bar. The plate is raised to release the traces. The rings of the collar chains embrace a sliding pin pressed forward by a spring into a hole in a bridle-piece at the end of the pole. The rings are released by drawing back the pin. Cords or chains, wound on a drum near the driver, pass to a pulley of which the axis carries pinions gearing with vertical racks attached to the splinter-bar plate, and a pair of cords also pass along the pole to the sliding pin. By turning the drum the traces and the collar chains may be released simultaneously.

Abridged also in Class Road vehicles.

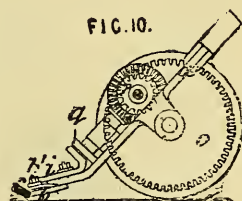
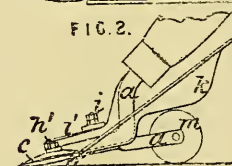
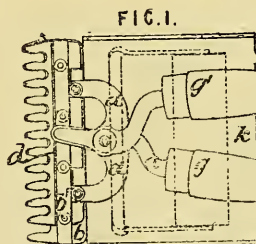
3255. Kortick, F. Aug. 13.

Harness, fastening.—Coupling-hook for bridles, reins, traces, &c. The slotted loop A is for a strap or the like. The recesses D formed in the lugs B admit of the connecting link, and the lugs B allow the shank of the hook C, to lie between and to stand over the depression D, so that, when the hook C is swung back, the connecting link may be carried over with it. For some purposes the hook may have but one lug B, and also the part A may be in the form of a sleeve.

Abridged also in Class Nails &c.



3392. Clark, W. Aug. 23.



Grass and like clippers.—A grass-cutting machine which can be used in positions where it is difficult to move the machine forward. To the frame a, Figs. 1 and 2, is secured the bottom plate or comb b, which is slightly hollowed on its upper surface. The cutter plate c is made slightly convex, and is provided with elongated slots through which the bolts b' fixed in the bottom plate protrude. These

bolts are screwed and are provided with nuts and washers by which the plates can be fixed together. In lieu of nuts and screws spring fingers may be used to keep the plates in contact, or a third or top plate may be used for the same object. The bottom plate or comb *b* is secured to a frame *a* on a projection of which the handle *g* is secured; the other handle *g'* is secured to the fulcrum *i* and gives motion to the lever *l'* actuating the cutter plate *c*; or the handles may be fixed so that each performs its own share in actuating the cutters, the handles being fixed on opposite sides of the fulcrum. A tray or receptacle *k* may be fixed to receive the cut grass. The handles *g, g'* are made interchangeable. The machine rests on a roller *m*, which may be placed as in Fig. 1, or two wheels may be used attached outside the framing *a*, or small rollers may be fixed under the bottom plate. The rollers and tray are fixed so that they can be easily removed, so that the machine can be used for trimming vegetable growths or for cutting round borders or edges of garden beds or banks. The cutters may be actuated by gearing as shown in Fig. 10, or by friction-wheels, the cutters being rapidly moved by the lever *i*.

Abridged also in Classes *Agricultural appliances for the treatment of land &c.*; *Toilet &c.*

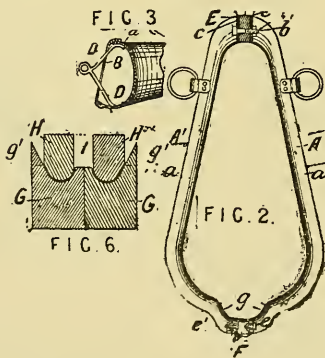
3459. Colding, W. Aug. 28.

[Provisional protection only.]

Harness, fastening.—The crosshead of a two-horse vehicle is made to slip back, by pressing a knob or lever &c., so as to release the collar chains in the event of the horses falling.

Abridged also in Class *Road vehicles*.

3519. Lake, W. R., [Fisher, E.]. Sept. 2.



Collars, neck.—The frame of the collar is made in halves, each being pressed from sheet steel or other metal by dies into the longitudinal form of *A, A'*, Fig. 2, and nearly semicircular in cross-section with rolled flanges *a* which may be perforated for attaching by riveting or stitching to a thin metal or leather covering *B*, Fig. 3. The

coverings may be dispensed with in warm climates, or openings may be made to admit air between the cover and the plates *A, A'*. Brackets *D* fixed to the flanges *a* give attachment to the draft tugs and strengthen the collar. The sides are pivoted together at the top by a bolt *b* passing through flanges *c* on the parts *A, A'* and through wood or leather pieces *E* which may be inserted to widen the collar. Similar fastenings join the lower ends, and a piece *F*, interposed if necessary, bears flanges corresponding to those on the parts *A, A'*, and is fixed to the part *A'* by a bolt *e'*, which passes through the flanges and a plate bent over them, and to the part *A* by a pivoted catch overlapping the flanges and a bolt *e* passing through them. On the removal of the catch and the bolt the parts can separate here, pivoting on the bolt *b* at the top, can be put over the horse's neck, and closed again by the bolt *e*. The lower ends are curved at *g* to avoid pressure on the neck. The matrix blocks *G, G*, Fig. 6, for shaping the metal are made in pairs for each side of the collar, as are the die blocks *H, H*, the latter having a space left between them for expansion of the metal. Parts *g'* of the outer sides of the matrix blocks are bevelled above the dies to cause the metal to strain smoothly in the stamping, which is done by the blocks and dies being placed in a press.

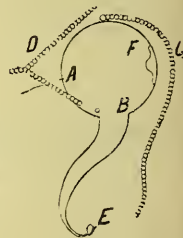
Abridged also in Class *Metals, Cutting &c.*

3572. Gedge, W. E., [Bontemps, A.]. Sept. 5.

[Provisional protection only.]

Nose-compressing apparatus.—

A piece *B* (of the form shown or of other form), opening on a hinge at *A* and closed by a catch *F*, is fixed on each side of the bit, between the latter and the horse's mouth. The curb chain *C* connecting the two pieces passes under the chin, and the chain *D*, which is joined by straps to the apparatus and to the bridle or the top of the bit, passes over and compresses the horse's nose when the reins attached to the loops *E* are pulled.



3729. Meyerstein, W., [Thiboust, E. A. O.]. Sept. 17.

[Provisional protection only.]

Collars and saddles.—The padding is made in separate cushions, any of which may be removed, and replaced to enable chafed parts to be protected from friction.

3872. Kneen, J. Sept. 25.

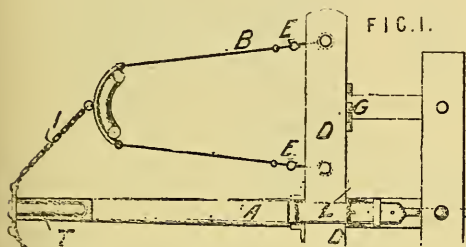
[Provisional protection only.]

Traces &c.—Driving and other belts, such as traces &c., are strengthened by a band or bands of metal arranged in a line with the belt so as to

ensure the strain on each being equal. The band may be attached by flat staples or secured between two plies through each of which the staples pass alternately. By another method the strap may be split to receive the metal band and the edges sewn together over it. Or it may be inserted between two plies the edges of which are sewn together. The metal bands are turned over at their ends and coupled by a spring.

Abridged also in Classes *Mechanism &c.; Ropes &c.*

3974. Towers, J. R., and Berry, C. Oct. 3.



Harness, fastening.—The splinter-bar D is formed in hinged halves, kept together by springs. On the upper half are fixed projections fitting into recesses on the lower half. The traces B are connected by hooks or rings E to the projections, and by lifting the strap or handle L the top half of the splinter-bar is raised and the traces released. The pole-chains I are connected to a pin T, which fits into a socket in or on the end of the pole. When the traces are released the horses withdraw the pin from its socket. The application to the shafts of a two-wheeled vehicle is also mentioned.

Abridged also in Class *Road vehicles.*

4213. Farron, W. H. Oct. 17.

[Provisional protection only.]

Head-stalls.—A metal cage or muzzle made of two rings connected by bars is substituted for or connected to the ordinary leather nose-band, and extends just beyond the animal's mouth. One or more bars kept in position by the throat lash or neck strap are joined to this muzzle, and extend to the back of the head terminating in a padded fork. The apparatus may be padded and made adjustable to suit the distance between the mouth and neck.

4427. Shepley, J. G. Oct. 30. *Drawings to Specification.*

Tugs, shaft.—A buckle is included in this invention. The frame is divided into three spaces or openings by two crossbars. On the upper bar is secured a tongue by which a strap or back band may be buckled on. On the end of the frame at the back of the third opening a looped strap or tug is attached.

Abridged also in Class *Wearing-apparel, Div. IV.*

4432. Bligh, M. V. Oct. 30.

[Provisional protection only.]

Nosebags.—A loose or fixed D hook is attached to the bridle between the blinker and rosette, and is curved forward right and left for suspending the nosebag from the collar or other part of the body harness by a rope or strap. A stop on this strap prevents withdrawal of the horse's head from the bag.

4543. Whitaker, R. Nov. 7.

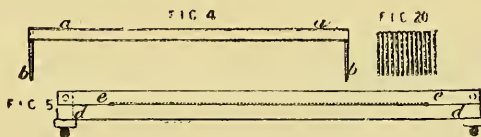
Whip sockets.—A disc of metal is pressed into a cup form by suitable tools; the flat bottom is cut out so as to leave a seamless band 2, which is then operated upon with rollers to produce a set bevel 4 at or near its edges, and the case is finished in the ordinary way. Such cases may be used as whip sockets.

FIG. 4.



Abridged also in Classes *Advertising &c.; Boxes &c.; Fuel, Manufacture of; Furniture &c.; Philosophical instruments; Registering &c.; Sewing &c.; Table articles &c.; Tobacco; Toilet &c.; Toys &c.; Watches &c.*

4558. Hart, J. Nov. 8.



Combs for the human hair or for dressing animals. The teeth are formed of solid or tubular wires in short lengths, or of semi-cylindrical wires bent so as to give a rounded point, or single wires bent as in Fig. 20 are used. The wires, if of steel, may be magnetized. They are secured, by solder or cement, to backs of metal, wood, vulcanite, papier mâché, or other material. The back a, Fig. 4, may be of elliptical or other section, and if of metal may be formed by stamping, drawing, or casting; or a tube may be punched or drilled along the edge for the insertion of the teeth and the end guards b. Backs may also be made of two or more parts united by soldering, riveting, or by clips; or they may be cast on the teeth, which in this case are preferably headed. The combs may be made single or double and may be provided with a handle. A clamp for holding the teeth while the back is being attached consists of a grooved bar e, Fig. 5, to the bottom of which a plate is attached. A plain bar d rests on the plate, and is held against e by the nuts and clamping-screws.

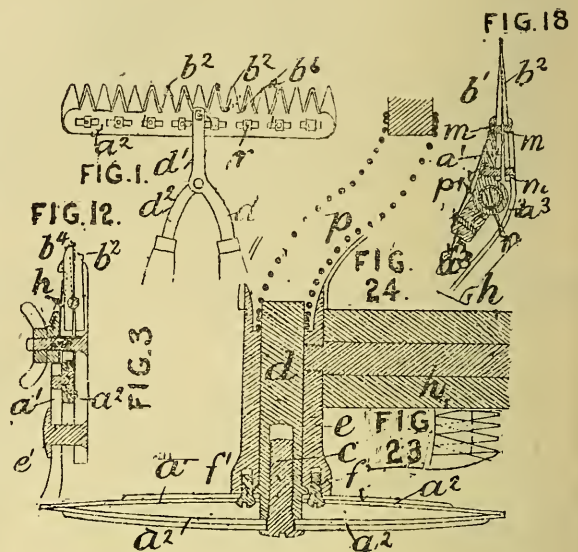
Abridged also in Classes *Medicine &c.; Toilet &c.*

4626. Ridgway, A. Nov. 13.

Horse and like clippers.—The shears, Fig. 1, for hedges, corn, grass, lawn or turf, &c., has blades b^1 , b^2 bent as in Fig. 3 to produce a gradual contact of the cutting-edges from heel to point as they reciprocate. If necessary, screw-pins r have springs under their heads to allow the blades to yield to pass over one another. U-shaped clamps may be used in place of the pins r . In shears for horses, sheep, &c. the teeth b^1 , b^2 , Fig. 12, lie in grooves in the plates a^1 , a^2 , and are recessed for a rod which secures the teeth and keeps the two sets slightly apart at their heels, causing their points to overlap. The top plate a^1 rests and slides on the rod, allowing the teeth a little play in their grooves to pass over the bottom teeth. In the shears, Fig. 18, for sheep or other animals or human hair, teeth b^1 on a rod r are pressed against teeth b^2 by springs p ; the upper plate a^3 slides on the rod. Shanks connected by an ordinary spring bow to open them after the cut are jointed to plates a^2 , a^3 . The lower plate has a slight twist throwing the points of its teeth higher in succession to the left, so that the two sets cross as shown while making the cut. Another form somewhat similar in action to those, Fig. 1, but for sheep or other animals, or human hair, has a guard plate which stops material passing beyond the cutting-part of the blades, and instead of the blades being bent, a strip is placed between the lower edge of the two plates to incline them.

Fig. 24 is a machine for clipping sheep or other animals, or human hair, in which a plate a^2 oscillates or rotates against a plate a^1 ; they have cutting-teeth, Fig. 23. A telescopic driving-shaft connects to a spiral spring p which drives a shaft d and gives motion to the plate a^2 . A guard of rubber tube fixed to the tube e covers the spiral spring. The machine is held by a handle h .

Abridged also in Class *Toilet* &c.

**5001. Rydill, G.** Dec. 6.

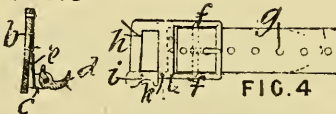
[Provisional protection only.]

Horse-rugs.—Tufted fabrics made by knitting or weaving for horse-rugs &c. When woven the warp is composed of any mixture of animal or vegetable fibres, or yarns, and after making a certain length of the cloth with or without a pattern, tufts of any desired material are inserted so as to show upon one or both sides. Another length of the fabric is woven and another row of tufts inserted, which are placed according to the desired effect. The fabric may be washed and fulled with care.

Abridged also in Classes *Furniture* &c.; *Lace-making* &c.; *Ornamenting*; *Packing* &c.; *Sewing* &c.; *Wearing-apparel*, *Dirs. I. and III.*; *Wearing* &c.

5079. Wilton, H. S. Dec. 11.

FIG. 3



Stirrup bars and leathers.—The plate b , Fig. 3, is riveted to the saddle-tree and has a projection c to which there is jointed a flap d that is kept closed by a spring e . The stirrup-leather is held by a

buckle f , Fig. 4, having above its top bar a loop or spring bar h , which is hung over the catch c , and one end i of the loop can turn on a pin k but is ordinarily held in position by a spring l bearing against its lower end. The stirrup may be carried by a single strap, the lower end of which is fastened to the stirrup while the upper is passed through the buckle, so as to lie behind the main part; or one end of the strap may be secured to the lower bar of the buckle, and the rest passed through the stirrup, and back through the upper part of the buckle. When a fall occurs on the side of the stirrup, the end i will yield and free the spring bar and stirrup; if on the other side, the bar h is pulled against the spring flap d , which yields. For ladies' saddles the stirrup leather is preferably sewn to a ring which is hooked over the projection c , or it may be sewn to the spring-hook with the stirrup-leather made in two parts united by a buckle for convenience in altering the length.

5181. Wright, R. P. Dec. 18.

[Provisional protection only.]

Stirrups.—The stirrup is made open on one side, and the tread plate has at this side a small upward projection to keep the foot from slipping off. The eye part to which the leather is attached may be connected by a swivel joint to the single side, or may be formed in the same piece with it, in the latter case being preferably made parallel to the

tread plate. When the eye is at right angles to the tread plate it may project entirely in one direction from the single side or more in one direction than the other.

5186. Gardner, H., [*Vasseur, C.*]. Dec. 18.

[*Provisional protection only.*]

Floating appliances for horses.—Two airtight

bags are shaped to fit against the rider's legs from the knees downwards and against the animal's sides, where they are fastened by a girth strap, another strap at the top attaching them to the saddle. Flexible airtight tubes are fixed to the tops of the bags, and have at their upper ends a pump by which the bags can be filled with air by the rider without dismounting, who can also empty them at once by turning a thumb-button.

A.D. 1880.

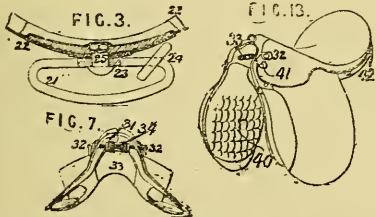
346. Campbell, T. M. Jan. 26.

Nosebags.—The nosebag is suspended by a buckle formed with a loop extension *a* and provided with a ring or loop *b* which may be loose, as shown, or may be formed in one piece with the buckle. The cord for raising the bottom of the bag when the corn becomes low passes through the guide ring *b* and round a small guide roller on a hook or like appliance fixed to the blinds or to adjustable suspension straps for the bag, the end of the cord being attached to any suitable part of the harness. To the loop *a* is attached one end of a short strap for hanging up the bag when it is not in use, the other end of the strap being provided with a hook for engaging the loop of the buckle on the opposite side of the bag.

Abridged also in Class *Wearing-apparel, Div. IV.*



405. Leckie, J. Jan. 29.



Harness fastening.—The front of the breast-collar bears a kidney-shaped link 21, Fig. 3, with a horizontal swivelling part 23 and a free ring 24 for the pole strap. The link may swivel completely round, a headed centre pin 25 being passed through the eye in the back of the link and secured by a screw nut to a metal plate fixed between the inside of

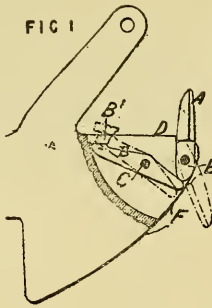
the breast collar and its inside lining. Instead of the centre pin the link may have a short spindle which is passed through the collar and through an inside plate and may be secured by a head or washer on its inner end. The opening in the plate has lateral sector-shaped parts in which work projections on the spindle, the play of the latter being thus limited.

Saddles.—The front parts of the end saddle tree are connected by a hinge 31, Fig. 7, and are held in place by looped or ringed thumbscrews 32 (or other movable fastenings) made with right and left handed screws respectively, so as to be held by a tapped coupling-piece 33 which when turned by a key inserted in the cross hole 34 draws together or apart the sides of the saddle. The Provisional Specification gives a modification in which the thumbscrews are secured into iron plates, two or more plates being provided for each saddle to fit different horses. A rest for the rider's back is fixed by loop thumbscrews to the cantle of the saddle. The pannels 40, Fig. 13, are in two distinct pieces with sockets for looped thumbscrews 41, 42, for easy change or removal. In the Provisional Specification there are also described (1) Adjustable and removable wedge-shaped bolsters which are fixed by looped thumbscrews or other means between the saddle tree and the pannel. (2) A panel of "second growth" sheepskin which is steeped in a solution of salts of tartar and ammonia, and then in one of saltpetre, vinegar, and oatmeal; it is next dried and rubbed inside with birch tar. Any suitable modification of tanning may replace the above process, and carbolic acid or other antiseptic may replace the birch tar. The side with the short wool is placed next to the horse's skin.

Abridged also in Class *Leather.*

589. Birch, W. P. Feb. 10.

Saddle-bars.—The stirrup leather rests on the part D, Fig. 1, of the saddle bar, and on the projection B' of a lever B which is pivoted at C, and with the upper surface of its arm keeps the hinged stop A vertical by contact with its tail end E. If the stirrup leather is drawn backwards, its front edge leaves the part B' free to rise, and the back edge presses against the stop A, which on the turning of the lever B is forced down as shown in dotted lines in Fig. 1, and the stirrup leather is released. A light spring may act against the underside of the lever B, to tend to keep the projection B' in the position shown by full lines. The saddle bar is made to slope upward behind as at F, to release the leather freely if a fall occurs on the opposite side.

**648. Brydges, E. A.** Feb. 14.

[Provisional protection only.]

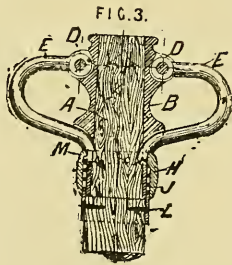
Harness fastening.—The whipple-tree, which is connected to the vehicle by a bolt, is formed at each end and in the centre of the front, with forks to carry a rocking bar. In the centre of this bar is keyed a lever, which is connected to a chain within reach of the driver. Each trace is slipped over a horn formed on a segment-piece, which is mounted in the end fork and has a notch to engage a tooth on a rocking arm keyed on the rocking bar and also mounted in the end fork. On lifting the lever by means of the chain, the teeth are drawn out of gear and the traces released. The rocking arms are provided with pins to retain the traces on the horns should the catches become disengaged by any other means. In a pair horse carriage, a lever is placed at the inner end of each whipple-tree, the two levers being connected by small chains to the chain leading to the driver's seat.

Abridged also in Class *Road vehicles*.

673. Brydges, E. A., [Poothoff & Golf.]. Feb. 16.

Harness fastening.—Slip-hook for pole chains and traces. Fig. 3 shows the application to a pole. The cap B carries a pair of pivoted hooks E, the rear ends of which are normally secured by a spring-actuated collar H'. A screw collar with spring retaining latch may be substituted for the collar H'. Similar devices may be employed on shafts, or on the ends of whipple trees.

Abridged also in Classes *Nails &c.*; *Road vehicles*.

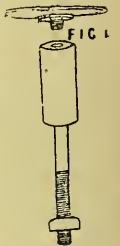
**1016. Greenstreet, F. H.** March 9.

Nosebags.—The bag is supported on each side by iron or other rods fixed to the shafts, or pole, or in the case of trace horses to the collar. Small shafts are fitted at their ends with sockets which supports the rods, the latter having hollow ends to catch on pegs fixed under the shaft. In large shafts the rods are attached by having forked ends which pass under a catch on the upper side of the shaft while sockets in the rods keep the latter in position by fixing over pegs on the shaft. For poles a rod attached as above has a curved branch on each side which runs to the outside of each bag, the inner sides of the bag being united by a connection which rests on the pole. For trace horses the rods are held in sockets that are let into the collar above the tugs and secured by a plate and nut at the back of the collar. Long rods may be jointed for doubling up and placing in the bag, or they may be fixed to the shafts, folding back by a hinge or sliding in a groove.

1021. Woolnough, C. March 9.

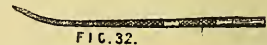
Trace fastenings.—The heads and shanks of roller and dragon-tongue bolts are made detachable, for the purpose of disconnecting the traces from a vehicle in case of accident. According to one method the head of the bolt is provided with a threaded plug as shown, to screw into the upper end of the shank. By this arrangement the head can be readily unscrewed and the traces released.

Abridged also in Class *Road vehicles*.

**1199. Heap, J.** March 19. *Drawings to Specification.*

Traces.—Compound bands of metal and leather or the like, applicable as traces and for other purposes.

Abridged also in Classes *Mechanism &c.*; *Ropes &c.*

1235. Jenkins, N. March 23.

Whips.—Relates to the construction of compound wire spring fabrics and to machinery for making same. Wires of hard brass, steel, or other hard metal are first braided into various flat, taper, and tubular forms in continuous lengths, and afterwards cut into the required lengths, the ends where cut being previously soldered together. The articles are finished by having caps or other terminations compressed on to the soldered ends by dies with faces diagonally grooved so as to impress the caps; the soldered ends can also be heated to cause additional adhesion. The springs may be covered with fibrous material braided over the wires, in which case the soldering could be dispensed with and the fibrous material could be saturated with waterproof sizing. The springs could be thinly coated with rosin or varnish to

prevent oxidation, or the wires might be plated with metal of an incorrodible nature. For taper tubular springs formers or cores are introduced which in some cases are permanent. Temporary cores are used of fusible metal which are melted out when the articles are produced. In continuous springs of uniform section a smooth stationary former is used which allows the braid to slide off as fast as it is formed. Fig. 32 represents a whip braided in a tapering tubular form a portion of which may be filled with a core of elastic material. The wires at the butt end are twisted together and a cap attached.

Abridged also in Classes *Agricultural appliances, Farmyard &c.; Fencing &c.; Fish &c.; Furniture &c.; Hollow-ware; Lace-making &c.; Mechanism &c.; Metals, Cutting &c.; Railway signals &c.; Toilet &c.; Trunks &c.; Umbrellas &c.; Wearing-apparel, Dics. II. and IV.*

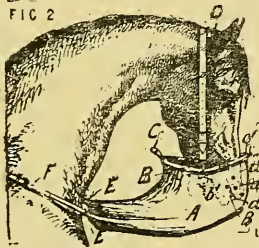
1327. Lake, W. R., [*Eissbrückner, C. F.*].
March 31.

[*Provisional protection only.*]

Blinkers.—Blinkers having cavities larger than the animal's eyes are pivoted upon a hoop fixed by straps, and are held open by an arrangement of levers and spring bolts, so that when released by pulling a rein they are closed over the eyes by springs. In a modification, the blinkers, which have their rims formed of springs covered with cloth, are fixed rigidly on a hoop and are usually held out of action by cords attached to a spring, being released when necessary by a rein.

1412. Langsford, H. April 7.

Nosebags.—The mouth of the bag has a purse-like metal or other frame of two clasps B, B, Fig. 2, hinged at *b'*, and having a button *c'* and a tag *c* by which the bag can be closed when not in use. It is supported by the headstraps D, and by others F attached to the bottom of the bag E and to the collar or saddle or to a strap passing round the horse's body behind the shoulder. Holes *d* on each side, near the position of the nostrils, afford ventilation, which is also provided by the clasps B, B when open. The frame straps and bag may be made of any convenient material, and the frame with part of the nose portion can be fixed to ordinary bags.



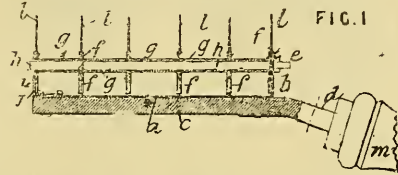
1526. Toberentz, P. April 14.

Whips.—A suitable number of pieces of cane preferably of equal size are planed on two sides so as to form when joined, Fig. 4, any desired taper, while the outside *a* preserves its natural glaze. A space



may be left in the middle by planing off the inside of each piece, to be filled with a core of raw hide cut into four-cornered strips and compressed into cylindrical form or with whalebone, steel, leather, or other material. The whips may be covered with twisted or braided cord or otherwise.

1595. Imray, J., [*Engström, A.*]. April 19.



Currycombs.—The back of the comb is a steel plate *a*, Fig. 1, with its back-edge *b* turned up at right angles and the plate *a* is secured by rivets to the back frame *c* which has a stem *d* to enter the handle *m*, or the handle may be held in two metal loops in the back. The front rivets also hold pieces *j*, under which are secured the ends of an angle piece *i*, and bolts *h*, passing through holes in the angle piece, in the raised edge *b*, and also in the flexible and elastic blades *l* as well as in pieces of stiffening plate *f* on each side of them (between which plates are tubes *g* serving as distance-pieces), hold all these parts firmly together by the nuts *e*. The holes in the plates *l* for the bolts are notched, so that by slackening the nut any blade may be moved or withdrawn, and serrated blades may be alternated with plain-edged ones to prevent injury to the animal's skin. Thick blades may be used with springs between, allowing them to yield to excessive resistance, and brushes may be fixed instead of, or in addition to, the blades.

1679. Jenkinson, W., and Mayman, J. F.
April 23. *Drawings to Specification.*

Horse cloths, fabrics for. Both the warp and the weft forming the face of the fabric are of jute or hemp, but the back weft is of soft wool or hair and is interwoven with the warp forming the face of the fabric, to produce a twill or plain face. Stripes or checks may be produced by using a variously-coloured warp. Special means for weaving the selvages are described.

Abridged also in Class *Weaving &c.*

1787. Paquis, E. May 1.

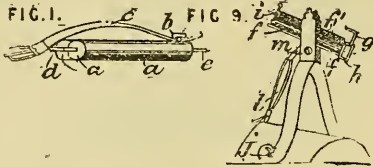
[*Provisional protection only.*]

Collars, neck.—The collar is made expansible by means of sliding hopper boxes with a rack and pinion adjustment actuated by a lever, and is fixed at the junction of the two parts by a brace and bolt. A safety spring keeps the collar extended, and the stem of the tug is received into slots with stop notches for adjusting the draught to the size of the horse.

Hame tugs.—These consist of an artillery hook, with a spiral spring to prevent sudden jerk, and a

nut which supports the hook and stretches the spring. The tug is kept in its seat by a spring, and its stem which passes partly through the collar is received into a slot with a notch for a key or cottar on the stem.

1906. Bonneville, H. A., [*Lange, G. de.*]
May 10.



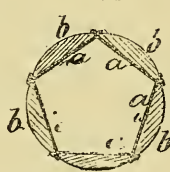
Rein-holders for use in training &c. Two cylindrical tubes *a, a*, Fig. 1, about three inches long, each containing two spiral springs of different strengths, are placed side by side, and fixed at one end to the ring *d* for attachment to the surcingle, saddle girth, or small saddle, while to the ring or hook *e* the bridle, bit-rein, or reins are attached. The powers of the two springs represent the action of the rider's hand, and their play is checked by the thumb screw *b*, while a strap *c* may be attached to this screw to protect the apparatus. The arrangement can be used as a harness hook by having the part *e* a hook, to which the bit-rein is fixed, the other end being attached to the small saddle. For strong-mouthed horses a third tube *f'*, Fig. 9, with a single very elastic spring of a strength equal to that of a finger of the rider, is placed above the other two tubes *f*, which contain stronger springs, and the play of one spring can be checked by the thumb-screw *i*. The spring in the tube *f'* is attached by two hooks *g* to the bit-reins, and the springs of the tubes *f* by rings *h* to the bridle-reins. This form is fixed to the surcingle by two screws *j*, and a strap *l* passed through a loop *m*.

1922. Straight, S. May 11.

Whip handles.—A thin metallic lining *a* is constructed preferably of two segments joined together and provided with overhanging edges to form channels for the reception of the thin ivory covering-pieces *b*.

Abridged also in *Classes Cutlery; Umbrellas &c.*

FIG. 5.



2079. Jones, R. May 22.

[*Provisional protection only.*]

Harness fastening.—Means specially applicable for disconnecting the shafts and traces from a vehicle in the event of the horses running away. In a single-horse vehicle, the shafts and traces are attached to pins forming arms of bell-crank levers, held in place by springs, the other arms of the levers being connected by chains &c. to a handle near the driver. By moving the handle, the levers are drawn back and the shafts released, a strap over the horse's back being provided to prevent

the shafts dragging on the ground. In a two-horse vehicle, similar bell-crank levers may be used for the traces and straps running along the pole for attaching the collar chains, or the pins may project from a rotating shaft, which is locked by a pin passing through it. By withdrawing this pin, the shaft rotates under the pull of the traces and the straps are released. Spring catches may be used instead of the pins, and the straps may be fastened to hooks linked to the pins, or the pins may be attached to one or more sliding bars, which are withdrawn for releasing the straps.

Abridged also in *Class Road vehicles.*

2095. Mills, F. A. May 24.

[*Provisional protection only.*]

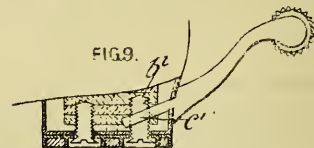
Saddles and saddle-bars.—The ends of the two main crutches in ladies' saddles are made square and encased in steel caps or bands to fit into sockets, in the saddle-tree, where they are fixed by passing steel pins with split ends through the sockets and steel caps. The crutches are forced out by springs in the sockets when the pins are withdrawn, which is effected by slip lines attached to their heads and to a running line placed near the saddle pommel and ending in a ring or otherwise so that the rider may free the crutches by a jerk. The lower saddle bar is hinged and secured by a pin made and freed as the pins above described, the line being joined to the others so as to release the stirrup with the crutches. In gentlemen's saddles only slip lines from the two stirrup bars are necessary, and they may be gathered with the reins or attached to the person.

2165. Silvermann, L., and Rishton, E.
May 27.

[*Provisional protection only.*]

Saddle bars and harness fastenings.—An apparatus is made in the form of a square of which the two sides are prolonged, and closing the open end thus left is a hinged piece held in place by a detent hinged on the other side. The detent is kept in position by a spring, but this can be overcome by the sudden pull of a cord attached to it and to the rider or driver. One part of the stirrup leather or trace &c. passes over the hinged top, and the other over the opposite closed end, which in the case of the stirrup leather may serve for the attachment to the saddle.

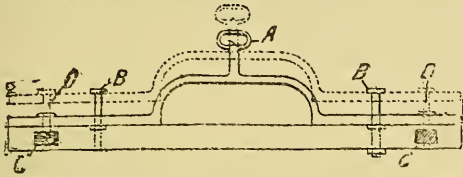
2352. Jones, J. W., and Bridger, E. H.
June 10.



Spurs.—A spur is provided with a shank *c* which is fitted into a slot in a metallic or ordinary heel of a boot and is secured by a screw *b*.

Abridged also in *Class Wearing-apparel, Div. III.*

2428. Allison, H. J., [Lievin, L.]. June 16.



Trace fastenings.—Relates to means for instantaneously releasing horses from vehicles. Recesses C are formed in the splinter bar to receive the roller bolts, which are secured by pins D screwed to a metal frame, capable of vertical movement guided by bolts B. On raising the frame by means of the handle A, the pins are lifted and the traces are released. In a modification, the pins are lifted by pressure on a pedal connected by a hinge joint to a lever, passing under the fore-carriage to the pins.

Abridged also in Class *Road vehicles*.

2543. Johnson, J. H., [Liebermann, J. A. J.]. June 22.

Wirework for harness.—Consists in employing for various purposes strips or bands cut from a material composed of wires coiled in a helical form connected together as shown in Fig. 2 by causing the coils of each helix to engage with the coils of adjacent helices. The strips are afterwards submitted to a gentle pressure so as to flatten the coils with a view to preventing the wires working out endways, and their edges are rendered smooth by clipping and turning them over, or by binding them with leather, india-rubber, or other suitable material. The Specification states that the material may be used in the manufacture of harness.

Abridged also in Classes *Mechanism* &c.; *Ropes* &c.



2628. Mantelet, P. F. June 28.

Horse and like clippers.—The movable cutter-plate is pressed against the fixed comb-plate by a curved cover plate c, acted upon by a pivoted lever X adjusted by a screw. The fixed comb is secured to the fixed handle e by screws. The pivot pin of the movable handle moves in bearings in the fixed comb-plate and fixed handle e. The movable comb has a recess to receive the working end of the movable handle. A rib on one edge of the cover plate enters a groove in the fixed comb and an even pressure is thus obtained. By unscrewing the adjusting screw of the pivoted lever X the parts can be easily removed. Projections on the movable cutter strike against stop-pieces on the fixed lever, to regulate the cut. For sheep-shearing clippers the cutter teeth are made coarser and when used as toilet clippers or for clipping the lower parts of the limbs and heads of horses, a



spring is placed between the handles so that the instrument may be used with one hand only.

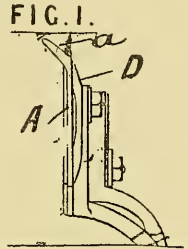
Abridged also in Class *Toilet* &c.

3082. Lake, W. B., [Les fils de Peugeot Frères]. July 26.

[Provisional protection only.]

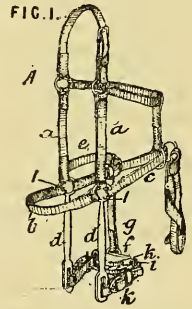
Horse and like clippers.—A prolongation A formed on the under comb A is provided with teeth, and can be adjusted, by means of a sliding plate, to regulate the length of cut. When attached to, or arranged upon, the under comb, without forming a part of the same, it may be formed of a different metal to the under comb, or be of bone, ivory, india-rubber, or the like. The arrangement is equally applicable to barbers' clippers.

Abridged also in Class *Toilet* &c.



3253. Clark, W., [Madden, A., and Levey, C.]. Aug. 9.

Halter attachment for preventing crib biting. A represents an ordinary halter, the attachment to which consists of the metal bars d, d, in one piece with the rings I, I, which are provided with spurs which are held by the stitching of the straps a, b, c so that the rings cannot turn, the under jaw strap e, and plate f and connecting straps. The plate f bears upon its front side a number of spikes i, and bent spring plates k which prevent the spikes entering the animal unless considerable pressure be applied. In use this attachment allows of freedom of movement except when the horse, in biting the crib, seizes the manger and drops his lower jaw, when the spikes i will prick his under lip.



3280. Anderson, E. L. Aug. 11.

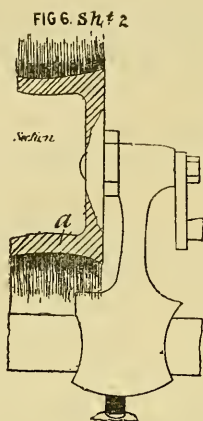
[Provisional protection only.]

Saddle-bars.—A double automatic escapement is applied to saddle-bars which, directly the rider's leg in falling backwards gives the slightest oblique traction, turns on its pivots and rests upon a stud or stop piece where it meets with resistance; if the rider is not then free, the escapement slides upon its pivots in a groove in a plate attached to the saddle-bar, and when it leaves this groove it is free. The stirrup leathers are hung in the escapement to a small latch or catch which lifts and releases them when the rider is thrown sideways or forward. To prevent forward swing the grooved plate is provided with a stop, and to avoid any lifting of the escapement due to the pace of the horse this plate is provided with a stop-bar; the catch of the latch is furnished with a spring.

3395. McCarthy, T. G. S., and Shakespear, A. Aug. 20.

Cleaning harness, plate, tin-ware, and the like. The cleaning-surface *a*, Fig. 6 (Sheet II.), of bell-shaped or other form is set with hair &c. and the apparatus may be clamped to a table and actuated by a crank handle as shown.

Abridged also in Classes *Brushing &c.*; *Cutlery*; *Furniture &c.*; *Grinding or abrading &c.*; *Washing &c.*; *Wearing-apparel, Div. III.*



3643. Holding, J., and Dutton, K. Sept. 8.

[Provisional protection only.]

Chains for harness &c.—The links are formed by coiling steel, iron, or other metal wire, riband, rods, or bars of any section upon any suitably-shaped mandrel and afterwards cutting the wire into lengths, or links may be formed from separate pieces of wire, elasticity of the link being regulated by the closeness of the wire in the coil. The links are afterwards threaded together or they may be used alternately with links punched from sheet metal, and for great elasticity the punched links are formed with inclines which compress the coils when subjected to strain. Links made from steel wire, may be afterwards hardened and tempered, and in some cases the links are made from hardened and tempered wire.

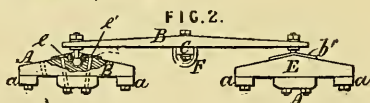
Abridged also in Classes *Chains &c.*; *Fencing &c.*; *Furniture &c.*; *Weaving &c.*

3794. Cooling, C. S. Sept. 18.

[Provisional protection only.]

Saddle trees.—For the belly wood or other non-yielding material is employed and so arranged as to admit of the skirt of the saddle being brought upon it.

4112. Babb, J. L. Oct. 9.



Neck yokes.—In the arrangement shown, A A are yokes formed of the bars *a, a* bolted to the end pieces E, E. Two of these yokes are secured to

two connecting bars B by ball-and-socket joints *e'*. A cross bar C connects the two bars B and carries a clevis F by which connection is made with the pole of the vehicle.

4741. Pass, E. de, [Soc. Guillaume et Cie.] Nov. 17.

[Provisional protection only.]

Horse and like clippers.—A notched plate is placed over a movable comb and takes into a heel-piece or projection on the movable handle. A button or stud at the centre of a jointed lever is free to oscillate in a suitably-shaped slot in the projection or heel-piece and is retained therein by a collar. A set-screw on one end of the lever presses against the movable handle and the top of the notched plate, to adjust the pressure on the combs or cutters. The movable comb is guided by the notched plate being suitably bent over or curved to enter a slot in the comb face. The movable comb is reciprocated over a fixed comb by means of a cam-finger or the like on the movable handle.

Abridged also in Class *Toilet &c.*

5207. Bowden, W., and Garward, J. Dec. 13.

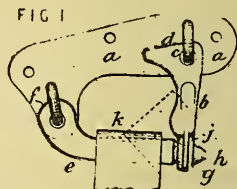
[Provisional protection only.]

Harness fastening.—Relates to a method of connecting the traces to the splinter bar in such a way that by withdrawing bolts the traces are released. In carriages the bolts are connected by a cord or strap to a handle in front of the seat.

Abridged also in Class *Road vehicles.*

5477. Dancer, Sir T., and Chappell, E. Dec. 29.

Saddle-bars.—The plate *a* is secured to the saddle; *b* is a vertical bar, hinged at *c* and provided with a cam *d* and an eye *g* to which is applied a spring *j* having play in a slot in the side of the eye; *e* is a horizontal curved bar hinged to the plate *a* at *f*, and grooved at its end *h*, into which groove the spring *j* takes and locks the parts together as shown. On the falling of the rider, the stirrup leather *k* pulling against the bar in any direction will unlock the two bars and release the stirrup. Should the rider be thrown on the opposite side of the horse the stirrup leather will pull up against the bars and the cam *d* acting against the plate *a* will cause the bars to become unlocked. Mention is made of a push piece hinged near the free end of the bar *e*.



A.D. 1881.

190. Edmonds, E., [*Mowbray, G. M.*].
Jan. 14.

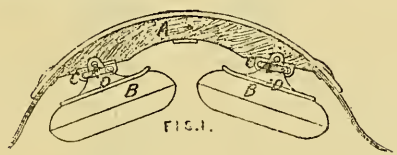
Materials for harness.—Relates to an india-rubber or gutta-percha composition that may be rolled on paper, wire gauze, or perforated metal for harness mounting &c. Pieces of cut caoutchouc and naphthalene are heated together for some hours at between 180° and 230° Faht. Before its temperature lowers, the hot mass is introduced into a masticating-machine which has been previously heated to 212° Faht. The plastic homogeneous compound formed is called "masticated naphthalized caoutchouc." To produce "masticated naphthalized gutta percha" the impure blocks are finely divided, washed, boiled, passed between toothed rollers, and strained. Naphthalene is added to the gutta-percha and the rest of the process is exactly the same as described above for caoutchouc. Soluble substances which it may be necessary to combine with the india-rubber or gutta-percha are dissolved in melted or boiling naphthalene and added to the hot naphthalized gum in the masticator. Materials which are insoluble in naphthalene are dried, heated to 212° Faht., and then introduced into the masticating mass, to produce perfect mixtures. After removing the excess of naphthalene either of the naphthalized gums may be subjected to the action of sulphur or the sulphides and to the process of hard or soft vulcanization.

Abridged also in *Classes Electricity &c., Divs. II. and III.; Fire-arms &c., Div. II.; India-rubber &c.; Pipes &c.; Waterproof &c. fabrics.*

238. Noirit, E. Jan. 20.

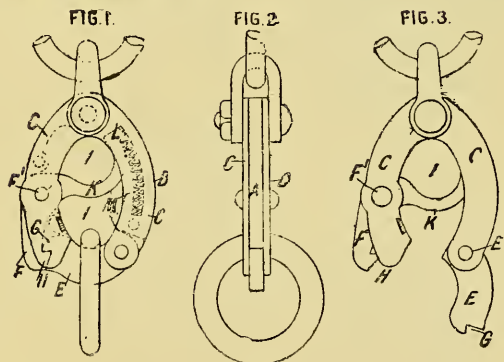
[*Provisional protection only.*]

Saddle-girth.—Flat strips of woven textile material—preferably flax or hemp—are placed side by side, each strip passing through separate apertures in transverse pieces of leather so arranged that the textile strips are held the requisite distance apart. These apertures are so made that each strip passes through two slits in each piece, the side on which the leather forms two ridges being placed away from the horse's body. "The strips so united are, at each of the two extremities thereof brought together or caused to converge in two equal portions, and in each of the four portions thus provided the strips forming the same are placed closely together at their ends and secured by a piece of leather which is bent over at the front and extends a short distance along both sides of the strips so as to enclose the latter to which it is sewn, a buckle being held by the leather. It will thus be apparent that each extremity of the girth so made is provided with two free ends, each of which is furnished with a buckle, so that the girth may be secured to the saddle in the ordinary manner."

361. Scholefield, A. Jan. 27.

Saddles.—The brackets C are fixed to the saddle, and to these the pannel plates D are hinged by means of studs E, allowing the cushions to move sideways upon their axis. The pannel plates D are perforated for purposes of ventilation. The brackets C have a number of holes so that the position of the cushions may be adjusted.

Abridged also in *Class Electricity &c., Div. II.*

480. Bezer, H. Feb. 4.

Harness, fastening.—Relates to modifications of the shackle described in Specification No. 1298, A.D. 1876, applicable as a fastening for pole chains. The body of the shackle may be made in one piece; or it may consist of three parts C, A, D. The inner piece A is formed so as to receive the spring B, and forms a strengthening distance-piece between the two outer pieces C, D. The link E, pivoted at E', is formed at its end into a catch G engaging with a corresponding catch H on the latch F, which is pivoted at F' and controlled at L by the spring B. The stop M prevents the spring from being overstrained. The working parts are so arranged that they will not jam if the edges of the body become burred, and the latch cannot catch in exterior objects. When two or more shackles have to be opened simultaneously, the latches are connected together by any suitable operating-arrangement.

Abridged also in *Classes Chains &c.; Nails &c.; Road vehicles; Ships &c., Div. III.*

- 1145. Nawrocki, G. W. von,** [*Nostitz, con, & Jaenckendorf, G. W. W.*]. March 16.

[Provisional protection only.]

Bits.—Relates to means for preventing the animal bringing the tongue over the mouthpiece of the bit when broken. Each hoop of a double hoop of steel forms an eyelet through which passes the mouthpiece on which the hoops are capable of turning. The two ends of each hoop are also provided with eyelets, the lower ends being connected with each other directly like the two holes of the mouthpiece, while the upper ends are joined together by a short link or a hook closed by a screw. The upper parts of the hoops are fitted with small chains, steel bars, or wire netting, so that the horse cannot pass his tongue through the hoops. The upper part of the hoop is connected right and left with the extremities of the cheek by small chains, or the parts of the mouthpiece on which the hoop turns are provided with projections to allow only a limited rotary motion of the hoop.

- 1573. Grimes, B. J.** April 11.

[Provisional protection only.]

Harness fastening.—Relates to a slip-hook. An enclosing frame-piece, pivoted at one end, has the upper end of the pivoted side engaging in a recess in the top shoulder, where it is secured by a collar piece with spring catch. On actuating the catch and the collar the pivoted link is released.

Abridged also in *Classes Nails &c.; Ships &c., Div. III.*

- 1656. Dovey, F.** April 14.

[Provisional protection only.]

Saddle-bar.—Attached to the saddle-tree by means of a plate or foot is a staple having a notch formed on its upper part, the lower portion being furnished with a depending stem. The saddle-bar is of U-form provided with a spring clip at the bottom part to effect the escape of the stirrup leather, the upper arm carrying a loop piece on which it can freely turn. The upper portion is shaped to take into the notch in the head of the staple on the saddle-tree, and an opening in the centre of the loop is made to suit the contour of the staple over which it is placed when in position, and from which it can be released should a rider fall on either side. A spring clip is placed on each side of the loop to lock it upon the staple when the spring bar is in its place on the saddle.

- 1797. Goodrick, J.** April 26.

Halters and reins.—Relates to a method of forming eyes for halters and rope reins. In the arrangement shown in Fig. 2, the two ends of the web *a* forming the halter are doubled back at *b* and brought together, and cord, horse hide or wire passed through them several times to form a loop on each side of the united ends. These loops are "whipped" together as shown at *c* or they may be twisted or plaited. The union of the web ends may be made more secure by sewing or riveting. Metal staples may be used,

their ends being turned over as shown at *h*, Fig. 8. Eyes for rope reins are formed similarly

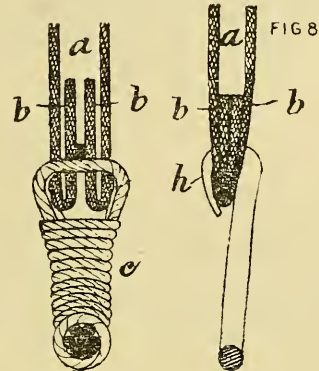


FIG 2.

to that shown in Fig. 2, the inner cords being passed through an opening in the rope.

- 1353. Clark, A. M.,** [*Bariquand & Son*]. April 29.

Horse &c. clipper.—A piece *a* is secured to the undercomb and a piece *a'* is pivoted at *k* to the undercomb and engages with the movable cutter in the usual way. Each lever terminates in an ear, provided with a recess *f*, Fig. 5, and projection *g*, which engage respectively with studs *e* and recesses *d* on the parts *a, a'*. The levers are held frictionally by nuts and washers on the studs *e*. By shifting the levers so that the projections *g* enter other recesses *d* on the parts *a, a'*, a side clipper is formed. The levers may be hinged or jointed permanently to the parts *a', a'*, and be locked in one or the other position by means of pins. The above construction is applicable to the Clark, Newmarket, Adie, and other forms of clipper, and also to sheep shearers and hair-cutters.

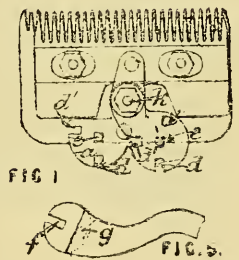


FIG 1

FIG 5.

Abridged also in *Class Toilet &c.*

- 2173. Walters, R., and Hewitt, J.** May 18.

Saddles.—Relates to the connection of the saddle girths to the saddle by means of spring attachments. In the arrangement shown in Fig. 3, the springs *b* are enclosed in a protecting frame *b'*, the thickness of, or a little less than that of the "bars" of the "tree" to which it is attached by

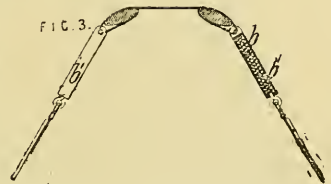


FIG 3.

webbing or other suitable means. In side saddles, in addition to the above, similar springs and frames are interposed between the ends of the "cross balance" and their attachment to the saddle on the "off-side." Such spring frames are connected to the "tree" by hooks or staples.

2551. Studdy, H.
June 11.

Girths.—Relates to straps or bands for saddle girths also applicable for securing trunks, portmanteaus, &c. The arrangement shown in Fig. 3 consists of two straps *a* and *b*, the latter being the wider of the two and terminating in a narrower strap *e* at each end. The strap *b* is provided with two buckles *c* to which are secured the straps *e* after they have passed over the rollers *f* attached to the saddle by the straps *h*. Cross bands *i* retain the straps in their proper relative positions. When employed for securing trunks, portmanteaus, &c. the rollers *f* are attached to the said trunk &c.

Abridged also in Classes *Fastenings, Lock &c.*; *Ropes &c.*



FIG. 3

2910. Trickett, J. July 4.

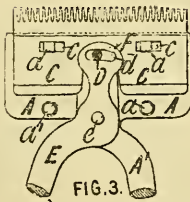


FIG. 3.

Sheep &c. clippers.—Relates to a form of clipper for hair, wool, &c. In the arrangement shown in Figs. 3 and 5 the cover plate *A* is formed in one with the handle *A'* and carries four studs *a*, *a*, *a*, *a*, to which is secured by a central bolt *D* the fixed cutter plate *B*. The movable cutter

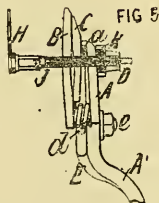


FIG 5

plate *C* is slotted at *c* for the passage of the studs *a*, *a*, and driven by the cam-shaped end *F* of the handle *E* pivoted at *e* and slotted at *d* for the passage of the bolt *D* which secures all parts together. Springs may be placed on the studs *a*, *a*, between the plates *A* and *B* as shown at Fig. 5, which also shows a comb *H* secured by adjustable screws to a cross beam *K* on the bolt *D*. This, which may be otherwise adjustably mounted, is to regulate the length of hair &c. to be cut. For use with one hand, as in sheep shearing, springs are provided between the handles.

Abridged also in Class *Toilet &c.*

2923. Abel, C. D., [Fleischhauer, H.].
July 5.

Harness fastening.—Relates to means for disconnecting the traces from a vehicle in the event of the horse running away or falling. Fig. 2 shows one arrangement. The trace *a* is passed through a horizontal slot formed in a metal bracket *c* secured on each end of a fixed splinter bar. A hole is formed in the trace and in the slot below it to receive a vertically-sliding pin *b* having a stud which bears upon the helical face of a cam *E*, the pin being forced downwards by a spring *h*. On turning the cam by a lever, the pin is raised and the trace released. For reconnecting the trace, a lever *m* having a stud *n* is pivoted on the top of the bracket, so that, on the pin *b* being raised, the lever can be moved by a handle *l* to bring the stud beneath the head of the pin. For releasing both traces simultaneously, the actuating-levers are connected by a rod, one of the levers being extended to form a handle. In the case of double harness the connecting rods are coupled by a link so that all four traces can be released simultaneously. In a modification as applied to a pivoted splinter-bar, the slot for receiving the trace is formed vertically, the sliding pin also carrying a cam to bear against the helical face of another cam which is rotated by a lever, the latter being connected by a link with bell-crank levers.

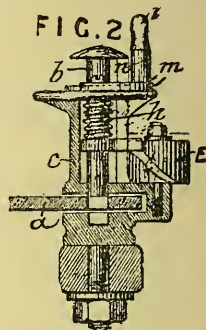


FIG. 2

Abridged also in Class *Road vehicles.*

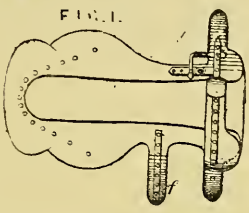
3017. Haddan, H. J., [Duplant, D.].
July 9.

[Provisional protection only.]

Collars.—The hames are provided with a hinged upper frame capable of lateral extension or contraction, and with an under frame with eye-holes and thumb-screw whereby it may be lengthened or shortened and fixed in the desired position. The draw hook is fixed in a slot with rectangular projections so as to be capable of vertical adjustment.

3090. Schreiber, W. F. D. July 15.

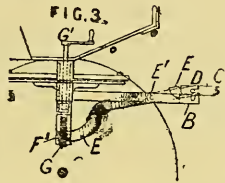
Saddles, ladies'. To prevent wringing or twisting under the weight of the rider, and at the same time dispense with the usual balance straps, an additional point is provided on the off side as shown at *f*, Fig. 1. An additional point may also be employed on the near side if desired.



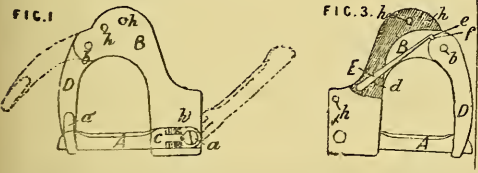
3444. Walker, W. Aug. 9.

Harness, fastening.—Relates to means for disconnecting the shafts and traces in case of accident or the horses running away. In one form the ends of the frame of the forecarriage are formed with jaws *B* having slotted holes in which the shafts *C* are pivoted by bolts *D*, the traces being slipped over the ends of the bolts. At *E* are pivoted two bent levers *E* the front ends of which are formed with jaws having slots for embracing the bolts, the inner ends being formed with slots to receive pins *F* on a nut working on a screwed spindle *G*. By turning this spindle by a crank handle *G*, the bent arms of the levers are lowered, the other arms being at the same time raised to lift the bolts out of the slots, thereby releasing the shafts and traces. In another form as applied to both single and double harness, the shafts are pivoted to short pieces which are then pivoted in the jaws *B*, and on which is fixed the splinter-bar, the slots being formed the reverse way to that described above as the splinter-bar prevents the upward movement of the levers. On releasing the bolts, the splinter-bar with the pole, or the splinter-bar with the shafts and traces, are detached from the vehicle.

Abridged also in Class *Road vehicles*.



3468. Curtis, G. Aug. 10.



Saddle-bars.—The arm *A*, which supports the stirrup leather, is pivoted to the plate *B* at *a* and has a vertical and horizontal joint at *c*. The free end of this rests in the hooked end *a* of the arm *D* pivoted at *b* and governed by an internal spring *E* the end *e* of which enters into a notch *f* in the cam-shaped end of the said arm *D*. The bar is secured to the saddle-tree by screws at *h, h, h, h*, thus increasing the strength of the said tree. The

dotted lines in Fig. 1 show the position the parts will assume when the rider is thrown in any direction. The force of the spring is greatest when the parts are in the position shown at Fig. 3.

3849. Archibald, J. Sept. 5.

[Provisional protection only.]

Nosebags for animals. The mouth of the bag is partially covered by a ring of india-rubber or other material having an inner downward flange which permits of the insertion of the animal's nose but prevents loss of grain when the animal tosses its head. Small holes are provided for ventilation and the cover is strengthened by fillets of leather or other material.

3971. Mewburn, J. C., [Daviau, J.]. Sept. 14.

[Provisional protection only.]

Holding animals.—Relates to appliances for securing horses and other animals and placing them in a lying position to facilitate surgical operations. The apparatus consists of a vertical iron frame, the two main parts of which are connected by stays, and of a platform fixed by collars to a horizontal shaft carrying a toothed sector at each end. The sectors are actuated by endless screws worked by means of bevel-wheels and pinions by a shaft fitted with crank handles. The animal is strapped to the vertical platform, which is then turned down. The frame is provided with rollers arranged to run on rails and fixed when the apparatus is in use.

4245. Purdon, E. Sept. 30.

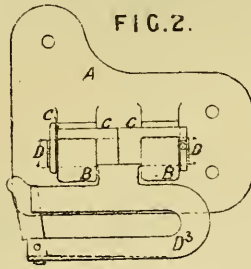
[Provisional protection only.]

Stirrups &c.—Relates to a curved plate shaped to fit the instep of the rider's foot, whereby he may obtain a firmer seat. In one form the curved plates are adjustable on bars attached to each under flap of the saddle and connected at their lower ends by a girth strap. In another form the arched plate constitutes part of the stirrup and the two stirrups are held firmly by a girth strap. The invention is said to be suitable for learners, for riding, breaking and training horses, and for military purposes.

4522. Spence, R. Oct. 17.

Saddle-bars.—The ordinary stirrup bar *D*, Figs. 2 and 3, has above it an additional bar *D*, which takes into the groove *E*, Fig. 5, in a pair of rotating journals *C, C*; these journals are carried in hook-like bearings *B, B*, attached to the plate *A*, which is secured to the tree of the saddle. The two bearings are connected and their rotation limited by the shoulders *J, J* of the flanges of one bearing coming in contact with the stop pin *I*, and they are

held in any desired position, such as in Fig. 3, which is the position for use when riding, by a

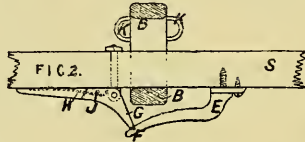


spring washer *c*, but when forcibly rotated in the direction of the arrow they stop in the position for the release of the bar *D* through the openings in the bearings *B B*.

4834. Dickinson, H. Nov. 4.

Harness, fastening &c.—Relates to means for rapidly harnessing horses to shaft vehicles. The trace and breech strap are attached, preferably by spring slip-hooks, to the links *K, K* of the tug *B*, which is slipped over the shaft *S* and secured by a fastening consisting of an L-piece *E*, and a hinged arm *G*; this arm is brought to position by the spring *H*, acting on the pin *J* and it also engages a notch *F* in the L-piece. The portion of the ordinary trace between the tug and the front part of the vehicle is done away with.

Abridged also in Class *Road vehicles*.



4946. Morris, C. F. C., and Bennett, F. H. Nov. 11.

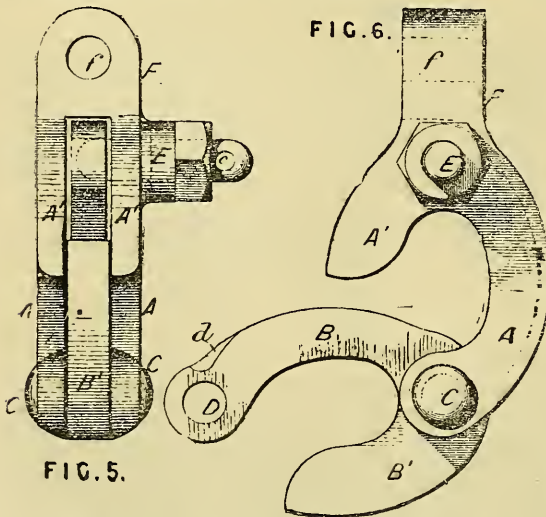


FIG. 6.

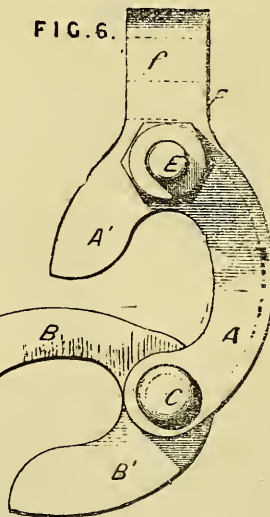


FIG. 5.

Harness, fastening.—Relates to modifications of apparatus described in Specifications No. 1389,

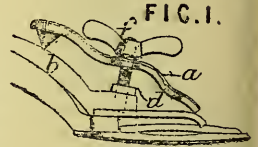
A.D. 1879, and No. 1265, A.D. 1881. The part *B* pivots at *C*, and is held when locked by the spring bolt *E*. The body *A* of the hook is recessed as shown by the dotted line to take the end *B'* of the part *B*, and the short part *A'* is slotted right through. In order that the strain may come directly on the pivot *C* and not on the spring bolt, the centres of the pivot *C* and the spring bolt *E* are not in the same plane. A recess *d* is formed in the side of the eye *D* to facilitate it passing the spring bolt. The spring bolt, which may for facilitating the release of heavy loads be slightly taper, is provided with a hole *c* to take a ring and line or other operating-attachment. The head *F* has a hole *f* formed through it for a shackle or other connection; it may be formed with a cross piece for attachment to the spring bar of a wagon, or it may form part of the pole head itself. In another form the part *B* is made to form one half of the actual link, when locked. This kind of link may be made the same shape as the rings now used for harness, and of such a shape that the straps or chains when released will glide away without injury.

Abridged also in Classes *Chains &c.*; *Nails &c.*; *Railway &c. vehicles*; *Road vehicles*; *Ships &c.*, Div. III.

5038. Guillaume, F. Nov. 17.

Horse, dog, &c. clippers.—The lever *a*

bears against the pressure plate at its forked end and the limb *b* at the other end, and has an opening at its centre through which the screw pin *d* passes. On the tightening of the nut *f* the tightening of the clipper is effected. The clipper may be readily taken apart and put together.



Abridged also in Class *Toilet &c.*

5349. Hutton T. R. Dec. 7.

[Provisional protection only.]

Clipping and shearing machine.—One or more radial blades are fitted on a shaft which is rotated or reciprocated by steam or other power. The frame carrying the bearings for the shaft is provided with prongs or bars, which are pressed against the hide, so that the wool or hair projects between them, and is cut off by the blade or blades.

Abridged also in Class *Toilet &c.*

5471. Loveday, T. Dec. 11. Drawings to Specification.

Collars for horses &c.—Collars are made to fit the animal by having springs and pads of hair or other material as used by upholsterers between the body and the lining of the collar. In one form the body is made of straw quilted flat with a forewale as usual for the hames; in another form it consists of a metal frame covered with leather and having a series of hooks instead of a forewale to hold the

hames; or the metal body may be left uncovered, polished, plated, or otherwise ornamented, and have two draw hooks attached for the traces, thereby dispensing with hames altogether.

5607. Zender, C. Dec. 22.

[Provisional protection only.]

Dog collars.—Locks for “dog collars, money bags, gloves, and other objects,” including garters and shoe ties. The lock consists of two parts of sheet metal riveted one on each end of the article to be united. One of the parts has its edges bent up so

as to form a sheath for the other part or tongue. In the edges are holes wherein two catches engage: the catches turn on studs which are riveted on the tongue. A spring presses the catches outwards for closing the lock. To protect the mechanism a metal cover plate is provided: in it are slots through which the upturned ends of the catches can pass. For gloves, garters, &c., these upturned ends carry outside the cover plate little knobs, which are seized with the fingers to open the lock, thus dispensing with two crossed levers or a wire triangle described as used for other articles.

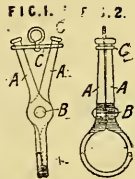
Abridged also in Classes *Fastenings, Lock &c.*; *Wearing-apparel, Div. IV.*

A.D. 1882.

293. McKenny, J. Jan. 20.

Hook fastening.—Two hooks A, A with straight legs work at the centre on a pivot B, so that when closed they overlap and form a complete link. A ring C is mounted on the straight legs of the hook, so that when it is drawn towards the pivot the hook legs can be separated, but when moved near the ends the hook will be securely locked.

Abridged also in Class *Nails &c.*



397. Lake, W. R., [Johnson, E. W.]. Jan. 26.

Terrets and reins.—A ball B is secured to each guide-rein and the terrets affixed to the saddle have openings C which will allow the balls to pass, and cup-like sockets A facing towards the driver, which will engage the balls but allow freedom to the reins. The balls are adjustable on the reins and are conveniently made in halves connected by screws which also pass through the reins, or in the case of round reins the halves may be dovetailed together and held on the reins by set-screws. These balls may be engaged with, or disengaged from, the sockets at the will of the driver,



and when engaged prevent the horse from lowering his head too much, from tossing it too much from side to side, and from turning corners too sharply.

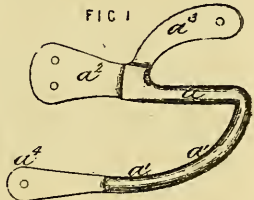
860. Archibald, J. Feb. 22.

[Provisional protection only.]

Nosebags.—To prevent loss of grain the mouth of the bag is partially covered with a flat ring of india-rubber or other material, the inside of which is flanged downwards. The ring is strengthened with fillets of leather and is provided with ventilating-holes.

945. Reed, J. L. Feb. 27.

Saddle-bars.—Relates to a form of saddle-bar from which the stirrup-leather is readily freed in case of a rider being thrown from his horse. The stirrup-leather is supported on the bar *a*, the rear end of which is bent downwards and forwards, forming the curved portion *a'*, *a'* and terminating in the ear *a'*; the bar is attached to the saddle-tree by means of the ears *a'*, *a'*, and *a'*. In case of a backward pull on the stirrup the leather slips off the bar *a*, and if it be thrown over the back of the horse it slides off the curved part *a'*.



982. Sharpley, C. P. March 1.

Saddle-cover.—A cover of flexible material is attached and arranged in front of the saddle so that it may be unfolded to protect the legs and lower part of the body of a rider, and also protect the saddle when unoccupied.

Abridged also in Classes *Furniture &c.*; *Road vehicles.*

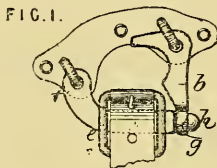
1107. Wheaton, F. March 7.

Stuffing-material for horse-collars &c.—The bark is obtained from cotton stalks by crushing them between rollers or by retting; it is then dried and passed between corrugated rollers, and the fibre obtained by carding or heckling. This fibre can be used for stuffing horse-collars &c.

Abridged also in Classes *Furniture &c.*; *Paper &c.*; *Ropes &c.*; *Spinning*; *Weaving &c.*

1491. Oldmeadow, J. March 28.

Saddle-bars.—Relates to an improvement in the safety saddle-bar described in Specification No. 5477, A.D. 1880. The improvement consists in dispensing with the spring in the vertical bar *b* and the slot in which it was placed according to the Specification referred to, and in splitting the horizontal bar *e* from its free end *h* towards its hinged end *f* whereby it is converted into a spring which maintains it in its position in the eye *g* of the vertical bar *b* until subjected to an undue strain by the stirrup-strap being pulled backwards against the bar *b*, as in the case of the rider being thrown.

**1509. Hickisson, J.** March 29.

[Provisional protection only.]

Riding-whip &c.—The handle consists of two hollow parts screwing together. The lower part encloses a porcelain tube containing a small pile or battery, the poles of which are connected to insulated metal blocks. The exciting liquid is supplied through an orifice in the handle having a screw cap. The upper part of the handle carries a contact bar or armature on a pin or shank terminating in a metal knob, stud, button or plate which presses the contact bar on to the blocks when depressed by the hand against the action of a spring, thus giving the user a shock. The action may be produced by the ferrule.

Abridged also in Classes *Electricity &c., Div. I.*; *Medicine &c.*; *Umbrellas &c.*

1521. Mewburn, J. C., [Goulet, P. H.] March 29.

[Provisional protection only.]

Bits and bridles.—The bit has branches, to the lower of which the ordinary reins are attached,

the upper ones being acted on by an additional pair of upper reins through levers or sectors pivoted to metallic side pieces carried by the nose-band and cheek-straps, the sectors having hooks which engage the upper branches of the bit. The object of the device is to urge the horse forward by causing the bit to press against its upper jaw when the upper reins are pulled. If both pairs of reins are pulled together the bit is pressed against the lower jaw and checks the horse in the ordinary way.

1961. Lake, H. H., [La Grange, R. J.] April 25.

[Provisional protection only.]

Horse-blinkers.—A roller blind for covering the eyes of the horse is actuated by cords leading to the driver; or the re-winding to uncover the eyes may be done by a spring roller. Two blinds on separate rollers which may be geared together may be used, one for each eye; the rollers are attached to the ornament which hangs from the brow band.

2043. Henson, I., and Hall, E. April 29.

[Provisional protection only.]

Bits and reins.—An ordinary curb bit is modified as follows:—The mouthpiece is able to turn in the side cheeks and is provided with arms at its ends to receive an additional rein. Stops are provided and so arranged that the curb rein operates in the usual manner and moves the side cheeks and mouthpiece as if they were fast together, but by the additional rein a further rotation of the mouthpiece is produced, a spring returning it to position when the pull is relaxed.

2173. Wright, E. May 9.

[Provisional protection only.]

Releasing fallen horses.—A shackle is attached to the horse's collar and to a body-part, and also to a link or clip. To the body-part, free to move, is attached a hook or arm formed to take into the link or clip, a space being left between the body-part and hook or arm to admit the chain. The hook or arm is acted upon by a spring which keeps the clip and chain in position. When the hook or arm is pressed it flies back and releases the chain. Stated to be applicable for other purposes requiring a secure hook and instant release.

Abridged also in Class *Nails &c.*

2350. Haddan, H. J., [Fesch, R., & Co.] May 18.

[Provisional protection only.]

Collars.—The bolster is attached by screws to a metallic skeleton made from several bands forming a hinge at the top of the collar and a lock at the bottom. The hinge pieces are toothed on one side which is placed adjacent to a correspondingly toothed part of the skeleton plates; a bolt passing through slots formed in both parts secures them.

in position when adjusted. The lock consists of two hinged pieces, a toothed strap and a bolt moved by a spring button. The upper hinges are connected by a bolt, bearing a bracket for ornaments. The sides of the skeleton may be united by an adjustable hinged fish-plate.

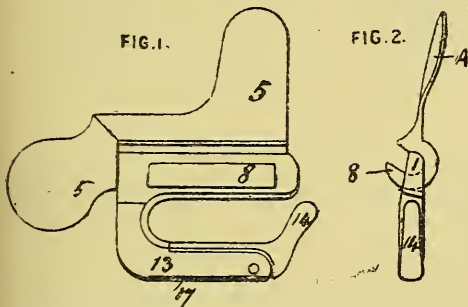
2443. Collis, C. P. May 24.

[Provisional protection only.]

Horse &c. clippers.—A cam with an inclined face, or a disc in an inclined position upon its shaft, when caused to rotate communicates reciprocating motion to the cutters. Clockwork, a flexible endless band from a rotating shaft, or the friction of rollers upon the surface to be cut, may be employed to actuate the mechanism.

Abridged also in Class *Agricultural appliances for the treatment of land &c.*

2858. Garden, R. S. June 17.

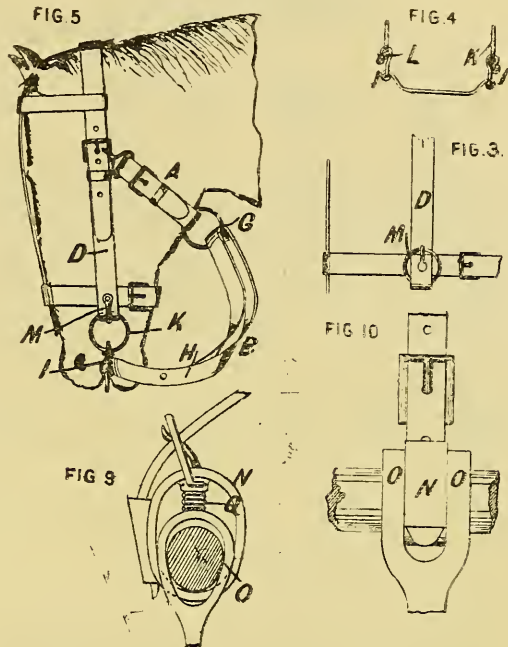


Saddle-bars.—The arrangement shown in Figs. 1 and 2 is constructed of two parts, the hook 8 secured to the saddle-tree by parts 5, and the saddle-bar proper suspended thereon by a slot. The slotted limb 1 is of greater depth than thickness above the slot, so that it cannot leave the hook 8 unless turned upwards to a certain angle. The lower limb 13 is provided with a tipping-lever 14 retained in position by a spring 17. The method of converting an ordinary saddle bar is described and claimed.

2988. Powell, W. June 23.

Relates to bridles, halters, bits, shaft-tugs, and back and belly bands. In the arrangement shown in Fig. 5 the rein B may be connected by the ring G to the throat strap A as shown, or to a neck strap, in which latter case increased power can be exerted on the horse. The two sides of the rein are connected by a rivet at H to ensure simultaneous action. In the arrangement shown in Figs. 4 and 5 I is a "drop-link hook" at the end of the rein, the ring K of which is secured by the dropping of the link L. This link I is capable of turning in a pivot to admit the ring K but dropping by its own weight to the position shown in Fig. 4. The rein and bit are connected in a ring at the lower part of the device. On the removal

of these the bridle may be used as a head collar. The tongue M shown in Figs. 3 and 5 is applied to the cheek D and is capable of moving on a pivot in order to secure the ring K and maintain it in an



upright position as shown in Fig. 3, so as to prevent its becoming entangled with external objects. The upper and lower shaft-tugs N and O, Figs. 9 and 10, are arranged one within the other. Springs or links of metal may be inserted as shown at Q to facilitate the entrance of the shafts into the loop O. The back-strap and belly-band are divided into portions connected by buckles, thereby affording a means of releasing the horse as required.

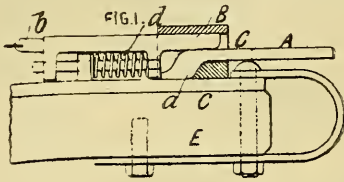
3126. Jenkins, G. T. July 3. *Drawings to Specification.*

Side-saddles.—To prevent "wringing," the stirrup leather passes, in a tube, over the back of the horse and is secured to the girth on the off side or to a strap attached to the near side of the saddle-tree and brought under the horse. Friction pulleys may support the leather in the tube. To further reduce the "lateral pressure," the end of the stirrup leather which is secured to the strap or girth on the off side of the horse is made to pass round a pulley or pulleys on such off side, the end being fixed to the saddle on the off side. The stirrup leather will pass behind, or through an opening in, the leaping crutch or under its socket, which is raised sufficiently for the purpose.

3197. Mitchell, J. J. July 6.

Harness, fastening.—Relates to a slipping-device or coupling, applicable as a coupling for vehicles,

ships' boats, and the like. The bar A to which the tractive force or load is attached is formed with a



curved tongue *a* which rests against a similarly-curved part in the inside of the hollow bridge-piece C which is secured to the plate *c* attached to the resisting shaft or support E. The tongue *a* is held fast by the piece B pushed inward by the spring *d*. To release the coupling the piece B is pulled out by a chain passing through a ring *b*.

Abridged also in *Classes Nails &c.; Road vehicles; Ships &c., Div. II.*

3277. Mills, B. J. B., [*Goudet, J., and Durozad, G.*]. July 11.



Nostril-closing or compressing apparatus for stopping runaway horses.—The strap *a* is employed instead of the ordinary noseband and to it is attached the spring plate *c* bearing the pads of caoutchouc or other material *b*. The levers *d* are hinged to the back of the plate *c* and connected to the supplementary reins, which are united in one at the back of the horse and by means of which the pads *b* are made to close against the nostrils of the horse. Springs in the hinges of the levers *d* tend to keep them out of action.

3289. Garrington, R., and Garrington, B. July 11.

[*Provisional protection only.*]

Hames.—Relates to the construction of hame plates for connecting the tug-chains to the hames of harness. These are made from a piece of heated iron by a pair of tools worked in a stamp. The fin being removed the solid joint block is drilled to form the joint by which the hame plate is jointed to the hame, and a hole may be provided through the ring block to receive the tug chain. A stem left may be afterwards forged by hand into the hook for the said chain, should it not be formed by the stamping process. Where long hooks are required the iron employed may be in two pieces to be welded by the stamping process.

Abridged also in *Class Metals, Cutting &c.*

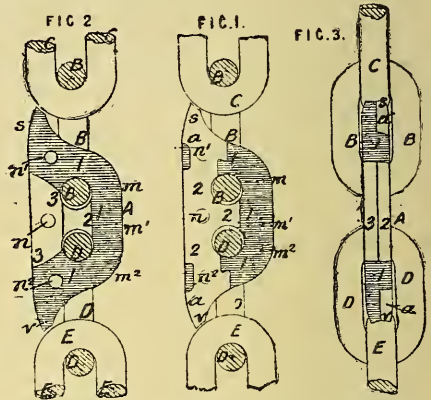
3469. Macleod, M. July 21.

[*Provisional protection only.*]

Saddle-bar.—A horizontal bar, pivoted to the saddle-tree and from which the stirrup leather

depends, is free to move upwards and outwards. The free end of this bar is supported in the lower and hooked end of a vertically-depending link pivoted to the saddle-tree and free to swing. To effect the engagement with this link the end of the horizontal bar is formed as a split spring, the members of which impinge on the sides of the hook, or other means may be employed.

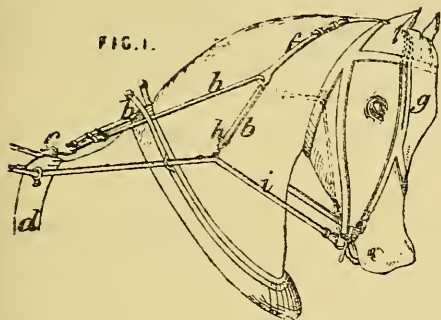
3495. Shoebottom, J. H., and James, J. F. C. July 22.



Harness, fastening.—Relates to a coupling-link for horse chains &c. The link is usually composed of three pieces. The part 1, shown in Fig. 3, constitutes the main body of the link, and is provided with recesses *a*. In connecting two portions of chain, the part 1 is threaded on to the links B and D, and then the part 2, shown in Fig. 1, is placed with its ends in the recesses *a*. A taper recess is now left, as shown in Fig. 2, in which the part 3 is placed and the three parts are secured together by the rivets *n, n', n''*. The part 3 is made taper so as to lock the parts 1 and 2 together and so enable the part 2 to withstand side strains even should the rivets *n', n''* be omitted. When the link is strained the part 2 stretches and the horns *s* and *v* take a bearing against the links C, E, and thus counteract the tendency to break the part 2. By slightly increasing the section of the part 1 from *m* to *m'* the link may be made, in conjunction with the horns *s* and *v*, as strong as an ordinary one. The piece 3 may be made with projections which assist to fasten the link together, and may also have a projection which fits into a corresponding recess in the piece 1. The link in another form is provided with a double bar which is kept in position by the split pin, and in another form the link is provided with a horn at one end, the other end being widened out. A split pin keeps the link from falling out when the chain is slack. The links may have slight projections formed on their sides, to keep the connected links over to the solid side of the piece 1 and thus throw as much of the strain as is possible on to that part. A very strong link is obtained by making the parts 2 and 3 duplicates of each other.

Abridged also in *Class Chains &c.*

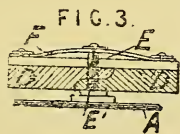
3922. Clark, A. M., [Harding, H. T.].
Aug. 16.



Reins.—The reins *b*, attached to the bearing hook *c* on the saddle *d*, pass through openings in the ends of the straps *f* and are adjustably secured to the driving-reins *i*. The straps *f* extend from the fore straps *g* of the bridle, which are secured to the bit for check reins. By this arrangement the strain on the check reins varies with that on the driving reins. For double harness a single rein *b*, on each horse, passes through the end of a single strap *f* and is returned and secured to the driving-reins at the point where they divide. The reins *b* may be disconnected from the driving-rein and used as ordinary check reins.

4122. Boulton, A. J., [Lehmann, F.].
Aug. 29.

Stirrups.—D, D are the meeting ends of the two sides of a stirrup divided vertically and hinged at the tread, a strong spring tending always to open the stirrup. The ends D, D form a lap joint which is secured by the pin E held in position by the spring F. A second pin E' bears against the pin E and is connected to a hinged plate A attached to the front of the stirrup. On the rider falling the toe of his boot comes in contact with the plate A and depresses the pin E, until the junction of the two pins is in a line with the stirrup joint when the stirrup opens, and with it the eye for the stirrup leather, which is also divided. In a modification, the stirrup is not divided, but the eye is detachable and secured thereto by a pin lying in a recess in the eyepiece. When a recessed portion of the pin is brought against the recess in the eye the joint is broken and the stirrup free to escape.



4261. Rees, J. P. Sept. 7.

[Provisional protection only.]

Saddles.—In saddles for children and invalids, at the pommel and at the crupper is placed an upright of iron and steel with a forked end, the prongs of which enter sockets in the saddle-tree on each side of the shoulder and crupper staple. A half

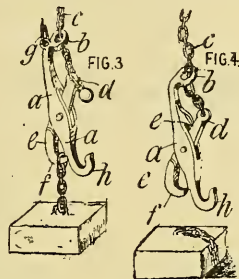
hoop is hinged to the top of each upright and at the ends thereof are fastenings which can be readily disconnected.

4478. Roe, J. T. Sept. 20.

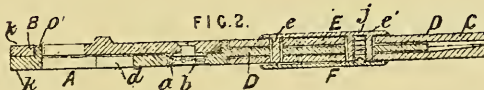
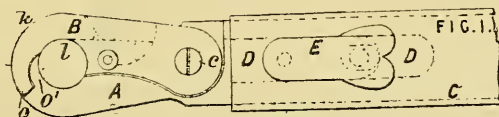
Harness, fastening.—Relates to slip-hooks for traces, stirrups, &c.

The two hinged levers *a* and *e*, Fig. 3, are of such a form that when the fall or other lowering-gear *c*, which passes through the eye *b* of the lever *a* and is fastened to the eye *d* of the lever *e*, is tightened, the part *f* is pressed against the lever *a* and cannot be moved until the fall is slackened. When the fall is slackened through the load reaching its resting place, the levers open and the load is freed; but to facilitate this action a cord may be attached to the lever *a* at *g*, which, being tightened when the fall slackens, takes the strain off the lever *e* and allows the part *f* to lose its grasp. To quicken the action of the hook a spring may be fitted between the levers as shown in Fig. 4. Or the part *d* of the lever *e* may be formed heavy, or be provided with a weight as shown in Fig. 3. The lever *a* may have a hook *h* formed on it for raising or lowering when the disengaging-hook is not required, or it may be used in conjunction with the disengaging-hook. Other forms of the hook may be used for horse's traces, saddle stirrups, or as a grapnel for raising sunken wreckage.

Abridged also in Classes Nails &c.; Railway &c. vehicles; Ships &c., Divs. I. and III.



4690. Lake, H. H., [Rairigh, W. K.].
Oct. 2.

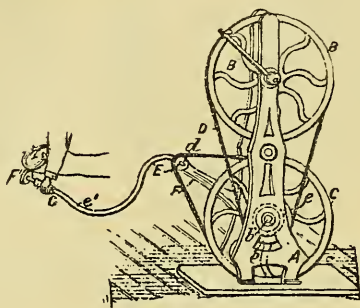


Harness, fastening.—Relates to a hook for traces. The jaw B lies in a recess formed in the main portion A, and is secured thereto by the screw C, in a circular chamber around which is a spiral spring *b*, one end of which is secured to each of the parts connected to hold the hook closed. The jaw B is provided with a shoulder *l* which closes the entrance to the main part of the hook so that no movement of the ring &c. embraced thereby will open the jaws, the extremities of which overlap at *k*, *k* and are further recessed at *o*, *o* for the same

purpose. The tongue D, perforated as shown, is placed between the plies of the trace C and the whole transixed by the projections *e*, *e'* on the plate E. Into the projection *e'* is screwed the stud *j* formed on the plate F by which the whole is secured. The plane of the tongue D may be that of, or at right angles to that of, the hook for the rear and front ends of the trace respectively.

Abridged also in Class *Nails &c.*

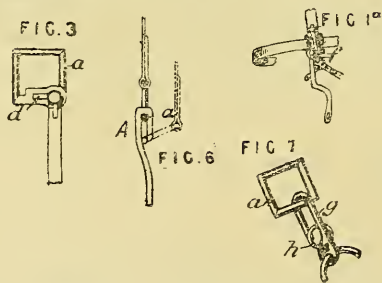
4728. Lake, W. R., [*Roe, F. A.*]. Oct. 4.



Brushing-apparatus for grooming horses.—A horse may be groomed by a revolving brush carried by the flexible shaft *e'* rapidly rotated by the machine shown.

Abridged also in Class *Horse-shoes.*

4872. Heinisch, J. G. Oct. 13.



Bridles.—The curb is dispensed with, the chin-strap serving instead. This is connected with the nose-piece by square eyes *a*, Fig. 3, in the lower side of which are slots *d* with enlarged ends. In these rest, capable of rotation, cheek-pieces on the upper ends of the cheek-bars, the flat heads of which are turned a quarter of a revolution to the position shown, to secure them after they are placed in position. By the snaffle-cheeks *f*, Fig. 1^a, the snaffles are hindered from arriving at the position which allows them to slip through the slots *d*. In the modification shown in Fig. 6, the upper ends of the cheek-bars, turned slightly outwards to prevent their projecting against the animal's head, are bent to form flat hooks by which they are hung upon square eyes *a*. The length of these hooks being greater than the depth of the eyes the escape of the latter is prevented except

when inclined as shown in dotted lines. The connection of the snaffle is effected by hooks *g*, Fig. 7, hung into the eyes *a*. The small rings *h*, which tend to bear against the hook end, prevent the accidental release of the hook. The snaffle is hung into the eyes *a* directly behind the snaffle hooks.

4937. Greenwood, W. H. Oct. 17.

[*Provisional protection only.*]

Horse and sheep clipper.—Consists of a rotary cutter working upon a vertical pivot, the hair being lifted to the cutter by a comb placed beneath. The cutter may be star, circular, or cam-shaped, arranged to give a sweeping effect to the cutting-edge, and may be driven by wheel-work or by an electromotor.

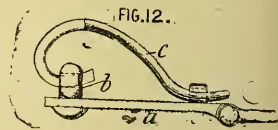
5033. Mewburn, J. C., [*Schwarz, C. von.*]. Oct. 23.

[*Provisional protection only.*]

Blindfolding-apparatus for stopping or controlling runaway and restive horses. Attached to the horse's head is a frame of U-shape and U cross-section in which is hung a curtain with U-shaped ribs. When drawn up in the frame this curtain is retained by a catch on each side of the frame carried on a lever on a spindle and kept in position by a spring. A rein attached to a third lever on the spindle is employed to withdraw the catches and allow the curtain to fall. When being lifted the successive ribs depress the catches by contact with their inclined faces. The movement of the levers is limited by pins.

5173. Aronson, J. N. Oct. 31.

Harness, fastening.—Relates to fasteners applicable to wearing-apparel, harness, &c. The base is pierced with holes for attachment to the article and to



the usual retaining-plate at the under side of the article. The loop or eye *b* is either in one piece with the base *a*, or a piece of bent metal attached to the base by passing each end through a slot and turning up each end under the base. The arm or bar *c* has a curved or bent end, which can be slid through the loop until it assumes an open position, and then a buttonhole or eyelet on the other side of the article can be passed over it. The arm is then slid back through the loop on to the base, and the tendency of the two portions of the article to move apart will have the effect of pressing the free end of the arm towards the base and thus of preventing unfastening. The bent part of the arm is slightly narrower than the other parts, and the inner end of the bent part is somewhat flattened. In one modification, a pin or stud is substituted for the loop, and the bent part of the arm has in it a slot which extends the same distance as the

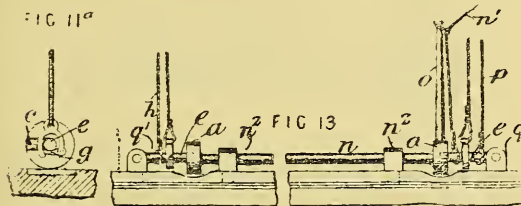
narrower part in the former arrangement. In another a part of the base is bent upward to serve as a spring, which aids in retaining the arm in the closed position. In another the retaining plate has a bent-up part which passes through the material and the base and forms a spring; other devices may be used to effect the same purpose.

Abridged also in Classes *Chains &c.*; *Furniture &c.*; *Railway &c. vehicles*; *Road vehicles*; *Wearing-apparel*, *Div. IV.*

5389. Sugden, S. S. Nov. 11.



Harness, fastening; slips for dog collars &c.—In the shackle shown in Fig. 1 the cross-bar *e*, which is hinged at *f*, is retained in the slot *c* of the disc. The disc, which is pivoted at *b*, is operated by the part *d* and held in position by the ring *d*¹. The cross-bar is released by turning the disc. This form of shackle may be adapted for fastening horse traces to vehicles. The dab-shackle shown in Fig. 7 has two bars *k* and *k*¹, supported by the parts *l*, *l*¹. The bars may lie at an angle as shown by dotted lines. One of the bars may be made



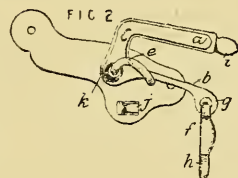
very short and the end of the other bar may lie on top of it. The short bar may have a line attached to it so that weights on reaching the ground may be released from above. A single bar *g*, Fig. 4, may be used, the end *i* of which may be lipped. In Fig. 13, for use in boat lowering &c., the rod *n* works in bearings *n*² and is provided at each end of the boat with a disc *a*. The bars *e*, which are hinged, are free to enter or become disengaged from the slots *c* shown in Fig. 11^a. The tackle is connected to the bars *e* by dab-shackles, such as the one shown in Fig. 4. The trigger line *n*¹, which is looped to one of the bars, passes through a thimble on the lever *o* and thence to the ship. By pulling the trigger line from the ship, or by operating the lever *o* from the boat, the discs are turned, the bars disengaged, and the dab-shackles slip off, bringing with them the trigger line and the steadying-lines *p*, *p*. This apparatus may be fitted without bearings between the lower blocks of the tackle, and may be used for letting go anchors, for securing ships' boats to the deck, for securing horse traces to vehicles, and the like. The shackle shown in Fig. 1 may be applied to boats when not

fitted with this arrangement. The shackles are also applicable as slips for dog collars.

Abridged also in Classes *Chains &c.*; *Lifting &c.*; *Railway &c. vehicles*; *Road vehicles*; *Ships &c.*, *Divs. I. and III.*

6054. Pearse, J. Dec. 19.

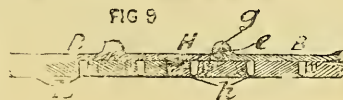
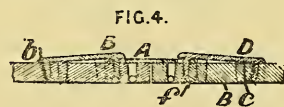
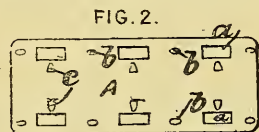
Saddle - bar.—The spring bar *b* and rigid bar *a*, united at their forward end *c*, are suspended by the curved link *e*. The link piece *f* attached to the spring bar has an eye *h* which is sprung over the extremity *i* of the bar *a*.



A stop *j* prevents excessive forward movement of the saddle-bar, and a stop *k* at the forward end of the bar *b* prevents the saddle-bar from jumping over the stop *j*. In the event of the rider being thrown over the horse's head, the bar assumes the position shown in Fig. 2, the strain on the link piece *f* causing it to slip off the protuberance *i*. If thrown in any other direction the vertical strain on the link piece *f* will cause its release from the bar *a*.

6168. Lake, H. H., [Johnston, A.]. Dec. 26.

Straps for harness &c.—Relates to devices for joining and strengthening straps, bands, &c. A malleable iron plate *A*, Figs. 2 and 4, is formed in one piece with two or more rows of flat taper teeth *b*, *c*.



In joining bands, the ends *B*, *B* are butt-jointed, the teeth *b* are forced through one end of the belt, and the teeth *c* through the other, the teeth being then clinched on the other side of the belt, the direction of the bending of the teeth *b* being at right angles to that of the teeth *c*. Part of the strain may be transferred further from the extremities of the belt by supplementary plates *D* with similar teeth and having prongs *f* which are bent inward at right angles to the plate *D* and passed through openings in the plate *A* through the belt. The prongs, together with the teeth of the plate *D*, are clinched on the inner side of the belt. The plate *D* might have another similar plate behind it. This device may be employed for

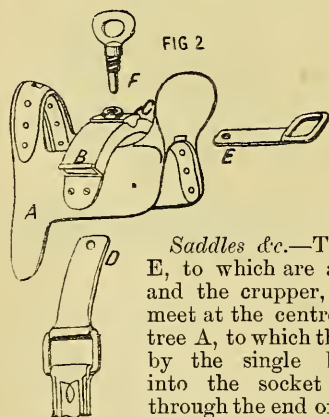
strengthening weak portions of belts, and also weak parts in harness and other straps. A modification is shown in Fig. 8. The plates A, D have teeth forced through the belt as above. Near the edge of the plate A is a slot *c*, and upon the adjacent edge of the plate D is a curved jaw or clasp *g* to pass through the said slot, the two plates being hinged together and forming a flexible connection capable of passing over small pulleys. The plate A might have two or more slots in line,

receiving a corresponding number of jaws on the plate D. For large stiff belts passing over pulleys of large diameter, a central plate H, Fig. 9, is used attached to the ends of the belt by teeth *h* and with slots *c* at both edges for receiving the jaws *g* of the plates B. The plate H might have several slots in line for receiving jaws on the adjacent plates.

Abridged also in Classes *Fastenings, Lock &c.; Mechanism &c.*

A.D. 1883.

185. Craddock, G. Jan. 12.



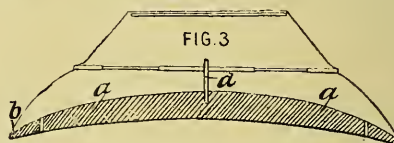
Saddles &c.—The loops D and E, to which are attached the tugs and the crupper, are arranged to meet at the centre of the saddle-tree A, to which they are connected by the single bolt F screwed into the socket *c* and passing through the end of each loop. The loops D lie in the trough B, under which but above a metal plate the end of the loop E passes. The removal of the bolt F releases the harness from a fallen horse.

453. Windus, W. Jan. 27.

[Provisional protection only.]

Saddles.—To prevent the crutches of a side saddle from injuring the rider in the event of the horse falling and rolling upon her, they are constructed to fold down on to, or into recesses in, the saddle in the direction of their curves, and to regain their position by the action of a spring.

688. Lake, W. R., [Nevière, L.] Feb. 7

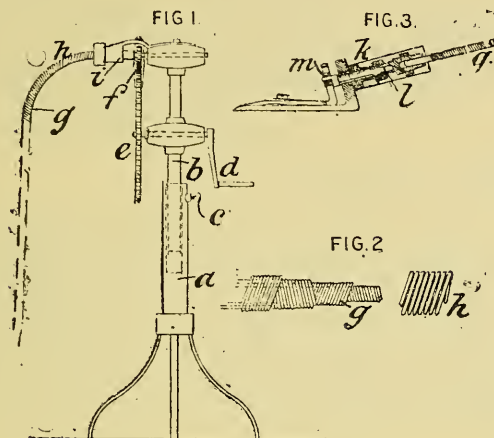


Rein holders.—The grooved crescent-shaped piece *a* carries a stud or studs *d* which enter holes in the reins placed in the groove on the convex side of the apparatus. The reins are retained by a lid (shown open in the drawing) or other means. The points *b* are held towards the horses. To drive three horses abreast, a ring is attached to the centre of the apparatus to which the reins of the centre horse are secured. To drive several horses, combinations of two or more holders are shown, which may be set back vertically from each other to allow of the leaders performing a greater circuit than that performed by the shaft horses. Various means of clamping or screwing the reins to the extremities of a bar or rod are shown.

794. Lake, W. R., [Carpentier, C.] Feb. 13.

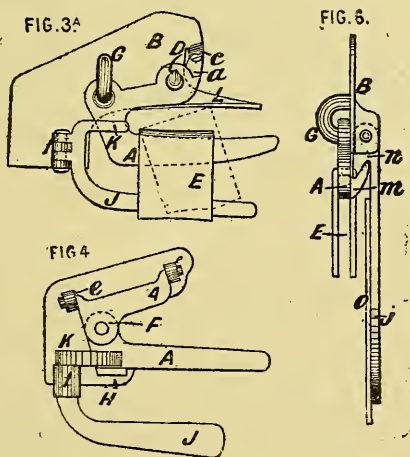
Sheep &c. clippers.—A flexible cord or shaft *g*, Fig. 1, is enclosed within a sheath *h*, and has one end attached to a pinion *f* driven by the gear-wheel *e*. The other end is attached to a rod *l*, Fig. 3, which passes through the hollow handle *k*, and actuates the upper blade of the shears by means of the eccentric pin *m*. The flexible shaft *g* is formed of concentric spirals of wires laid closely

over each other, with the direction of winding different in adjacent spirals.



Abridged also in Class *Mechanism* &c.

846. Macleod, M. Feb. 15. *Disclaimer*.



Saddle-bars.—In the arrangement shown in Fig. 3A, the bar A is suspended from the staple G and hook D. Lateral play is obviated by the tongue a, normally lying behind and bearing against the back of the tongue c formed on the plate B. As the bar is turned upward the tongue A is withdrawn from behind the tongue c, the rear end of the bar leaves the hook D, and the bar is then free to turn in any direction on the hinge G. The arm L formed in the plate B prevents, by friction with it, the leather E from leaving the bar more readily than requisite. The lever J with arm K assisted by the rider tends to keep the bar A in its normal position. In the modification shown in Fig. 4, the bar A is hinged at F and suspended by hinges e, e. In the modification shown in Fig. 6 the lever j pivoted at a point below the centre of the staple G depends vertically below the saddle flap O. When the

saddle-bar is in its normal position the hook m thereon engages with the hook n on the lever j. The saddle flap O has to be lifted before the hooks m, n become disengaged to free the bar A.

894. Mewburn, J. C., [Guillaume, F., et Cie.]. Feb. 17.

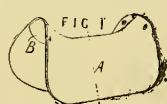
[Provisional protection only.]

Horse clippers.—The ordinary tightening-up lever is dispensed with and two projections of T-form on the fixed cutter-bar engage in two T-shaped holes or tenons in the pressure plate. The shanks of these projections take into two longitudinal holes in the movable cutter. Two screws passing through the pressure plate press against the body of the apparatus and convert the pressure plate into a lever supported by the lower face of the head of the tenon. The action of the screws causes the upper part of the plate to bear against the movable cutter, which it tightens against the fixed bar.

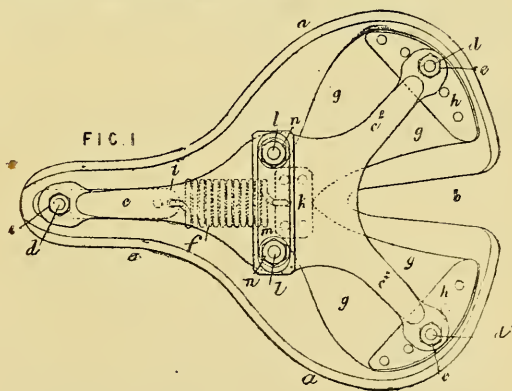
Abridged also in Class *Toilet* &c.

959. Tongue, J. G., [Curtis, D.]. Feb. 21.

Collar and saddle pads.—A is the body of the pad, constructed of leather or like flexible material. B is a strip of metal—preferably zinc—embedded in the pad and secured thereto, affording a cool, smooth, and remedial bearing for the neck &c. of the animal.



1008. Lamplugh, J. A. Feb. 24.



Saddles for horse-riding, bicycles, tricycles, &c., the invention being described in reference to a bicycle saddle. The seat is formed without any internal rigid support being of strong leather, stuffed in the ordinary way. A portion of the saddle a is cut away at the rear part as shown at b to remove pressure from the rectum and spine of the rider, and to permit the saddle to yield on either side to which the rider may incline.

Abridged also in Class *Velocipedes*.

1039. Lake, W. R., [*Lettström, G.*]. Feb. 27.[*Provisional protection only.*]

Tethering animals; dog-chain &c.—A chain is contained in a cylinder, the ends being connected to the two covers, which are provided with rings or catches, one to be attached to the horse's bridle and the other secured to a post or the like to secure the horse. One ring may be attached to the collar of a dog and the other to a staple &c. For leading a dog, the cylinder, with one cover in place is held in the hand. The apparatus may be modified for use as a coupling for other purposes.

Abridged also in Class *Chains &c.***1078. Wirth, F.,** [*Pickhardt, G.*]. Feb. 27.

Traces.—The form shown in Fig. 7 consists of thick spiral springs *f* directly screwed into each other to form bands of any required width, which may be rolled flat.

Abridged also in Classes *Beverages; Buildings &c.; Fencing &c.; Furniture &c.; Hinges &c.; Lifting &c.; Mechanism &c.; Ships &c., Div. I.*

FIG. 7.

**1289. Lake, W. R.,** [*Persson, J.*]. March 10.[*Provisional protection only.*]

Stirrups.—The tread is movable upon pivots in the bow. Two movable bars, jointed to the tread and pressed together at their upper ends by a spring acting on their lower ends, constitute a second bow. Against this the foot of the rider is pressed when he is unhorsed, whereupon the ends separate and release his foot. A movable loop for the stirrup leather is provided on the main bow.

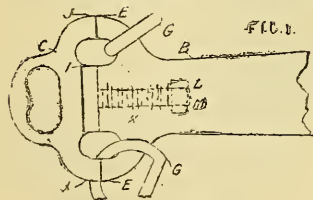
1359. Hill, R., and Pollitt, W. March 14.

FIG. 1.

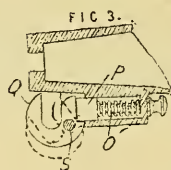


FIG. 3.

Pole-chain fastenings for facilitating attaching and releasing horses.—In one arrangement, Fig. 1, a metal socket B which is fixed on the end of the pole is formed with projections E to correspond with similar projections J on a swivel piece C, thus forming eyes to receive the chain rings G. The swivel piece is also formed with a rib I to engage a recess in the end of the socket B and is retained therein by a spring K bearing against a nut L as shown. On withdrawing the swivel piece from the recess by its handle, it is rotated to attach or release the horses and is retained in that position

by the spring. In another arrangement, Fig. 3, applied beneath the socket, a hook Q is pivoted on a pin S and is formed with a shoulder to engage the head P of a spring stud O. On withdrawing the stud, the head P is disengaged from the shoulder of the hook which then falls to the position shown in dotted lines to release the chain.

Abridged also in Class *Road vehicles.***1361. Gaussen, D.** March 14.[*Provisional protection only.*]

Collars.—Collars for horses and other animals are made of steel plate or plates, or other metallic substance "grooved," or otherwise united, and cut or stamped to the required form. The whole or part may or may not be covered with leather or the like, or patent corrugated india-rubber (Specification No. 3377, A.D. 1880), or enamelled or jappaned. The traces may be attached by spring hooks or otherwise.

1881. Edwards, E., [*Deschamps, O. A.*]. April 13.[*Provisional protection only.*]

Kneecaps.—A leather disc is formed of three pieces, the two outer ones of hard leather of concave shape connected together by a third strip of soft leather folded so that when its edges are sewn to those of the said concave pieces, the three form together a jointed cap. This is mounted as usual on a piece of cloth or leather and provided with two straps and buckles attached to the edges of the concave pieces, the lower one being provided with a pad or cushion.

1893. Combault, A. April 14.

Harness, fastening.—Relates to a stud and eyelet fastener. It consists of two parts, namely, a stud, Fig. 1^b, having a spherical or flattened-spherical head and an eyelet-hole 5; the



FIG. 5.

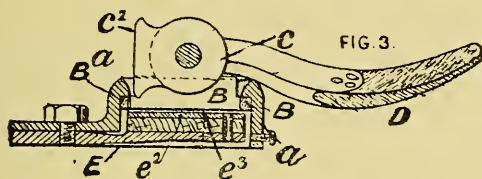


FIG. 1b.

latter contains a spring of steel or other elastic metal, and its shape is shown in the sheets of drawings attached to the Specification. The internal diameter of the central part of the spring is somewhat smaller than that of the stud head. The spring is fitted into a flat metal ring. Two slots are formed on two opposite points on the same side of the circumference of the ring. The spring is placed on the ring, its two ends resting in two slots. Another flat ring (correspondingly slotted or not) is placed on the first ring and the spring; the spring is thus held between the rings, the slots being of sufficient depth to prevent the ends of the springs from being squeezed between the rings. When the stud-head is pressed into the eyelet-hole the spring is forced open by the pressure and closes again round the neck of the stud-head. Modifications of the shape of the spring and of the eyelet-hole are described.

Abridged also in Classes *Fastenings, Lock &c.; Hinges &c.; Wearing-apparel, Div. IV.; Writing-instruments &c.*

2024. **Smith, T. G., and Brook, B.**
April 20.



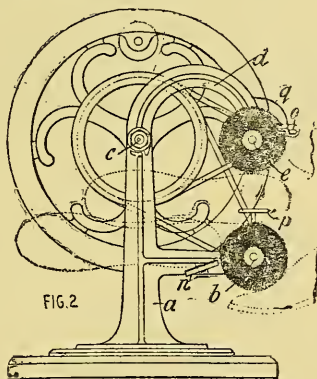
Side saddles.—The crutch D is pivoted at C to the part B of a universal joint, through a slot in which the piece e^3 of the crutch passes and bears in a groove e^3 in the block e^2 formed on the end of the spring E. On the rider being thrown, her dress becoming entangled with the crutch, turns it down against the spring, to the position shown, when it is free to revolve in the casing a to liberate the dress. The spring E may be connected to a lever supporting one end of the saddle-bar, so that on the depression of the crutch the stirrup-leather will be released.

2054. **Hargrave, J.** April 23.

Cleaning harness, boots, &c.—A standard a carries two arms on which rotating spindles b, e are mounted horizontally.

Each spindle carries a brush; two pairs of brushes are required, the one for removing the dirt, the other for polishing, and they are screwed on the spindles so as to be readily changeable. Both brushes of a pair act simultaneously and are arranged to approach and recede from each other, the upper arm d being pivoted on the standard and stops preventing their too close approach. The apparatus is worked by a hand-wheel or by foot or other power, and pulleys and bands. Suitable rests n, o, p and a guard q are provided, also a covering of felt or india-rubber for the hand of the operator for insertion in a boot or shoe; or a last may be inserted for the same purpose. In a modification, instead of changing the brushes the apparatus has four spindles driven from a common source, one pair carrying dirt brushes, and the other polishing-brushes. In another modification, three rotating spindles are used, placed vertically. The central one occupies a fixed position, and the others are carried by spring-held pivoted arms so that they can approach or recede from it, and the brushes are detachable or changeable. Four spindles may be used, the inner spindles being fixed, and the outer ones movable.

Abridged also in Classes *Brushing &c.; Food &c.; Metals and alloys; Washing &c.; Wearing-apparel, Div. III.*



2065. **Redfern, G. F., [Wilson, W. C.]**
April 24.

[Provisional protection only.]

Harness, fastening.—Relates to a fastening or coupling applicable for fastening traces to vehicles, hames to collars, straps, belts, bridles, saddles, and belly-bands, &c. It is formed of two portions, one consisting of a hollow cylinder and the other being formed of two spring plates attached to each other, and to which a spring may be added when required. "The upper plate has its ends turned "over to form a button or catch," or a solid button may be secured thereto. By pressing the ends of this contrivance by the thumb and finger it can be introduced into the cylindrical portion, and thus by pressure towards either end the buttons will force themselves through either opening by the spring action thus formed, the length of the attachment is regulated, such telescopic motion having the effect of adjusting the length of the article connected to the coupling. Projecting flanges on the attachment may be secured by eyelets to the article to be fastened. The male portion may be formed of pieces of steel each having its ends turned upon itself; two such plates are fastened together so far as they run parallel, the ends are then curved to form a cuneiform figure and the bent ends are hardened to form a spring, so that in passing telescopically into the female portion the buttons are passed through the circular opening next which it first presents itself and can be released only by pressure from the surface of the coupling. There may be in some cases two sets of holes on either face of the female portion.

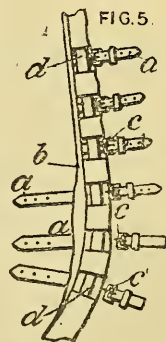
Abridged also in Classes *Electricity &c., Div. III.; Fastenings, Lock &c.; Railway &c. vehicles; Ropes &c.; Wearing-apparel, Divs. II. and IV.*

2207. **Nawrocki, G. W. von, [Wille, G.]**
May 1. *Drawings to Specification.*

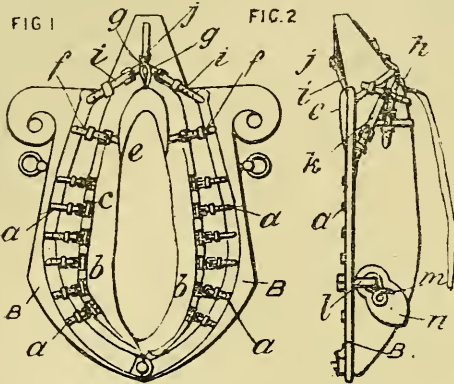
Blinkers.—Two spring roller blinds, the cases of which are attached to the bridle behind the horse's eyes, may be drawn over the eyes by cords communicating therewith and passing to the driver. Both blinds, coiled on the same or separate shafts, may be placed in one case placed between the horse's eyes.

2257. **Edwards, E., [Grandy, P. J.]** May 3.

Relates to removable padding &c. for collars, belly-bands, bits, saddle-pads, reins, blinkers, back straps and breeching, &c. Figs. 1, 2, and 5 illustrate a form of collar in which the padding is secured by a number of straps a , by the tightening or loosening of which the collar may be adjusted to the required size. The straps a are sewn to the inner leather b and secured to the yokes B by buckles c . Loops d , Fig. 5, formed on a leather band running above and below the covering of the yoke, assist to retain the padding. A



separate pad *e* is secured by straps *f*, laces *g* fastened to the buckle *j*, and four straps *h*, Fig. 2; the straps *i* regulate the width of the collar. Leather bands *m*, Fig. 2, are fitted to the iron bolts *l* and



hooks *m*. This principle is stated to be applicable to the following parts of harness—"belly-band," "bit, saddle pad, reins, blinkers, back strap and "breaching" to which protecting flaps are applied wherever liable to wear.

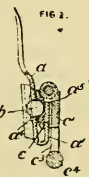
2279. Ratcliffe, E., and Sealy, O. May 4.

[Provisional protection only.]

Saddle-bars.—A bar, free to revolve in its bearings, bears a spiral groove, into which projects a fixed point, so that in revolving the bar also travels longitudinally in its bearings. To this bar is hinged a small bar to which is fixed a bar parallel to the first-mentioned bar, and to this is hinged a second small bar nearly parallel to the first small bar. The free end of this small bar is, by a spring at its hinge, arranged to bear against the bearing of the first-mentioned bar, the extremity of which, projecting beyond its bearing, enters a recess in the free end of the second small bar. The stirrup leather is secured within the loop formed by the said four bars. On the lifting of the loop the first-mentioned bar is caused to rotate and its end is thereby withdrawn from the recess in the second small bar, when the three sides of the loop can be turned on the hinged connection with the first bar and the stirrup leather released.

2302. Clarke, J. W. May 7.

Saddle-bars.—The hooked plate *a*, *a'* is secured to the saddle-tree and is provided with a spring catch *b*, which enters a recess in the portion *c* of the detachable hinged portion *c*, *c'* to the bar *c'* of which the stirrup leather is attached. The top edge *a'* of the hook *a'* is provided with projections at each end to prevent the detachable portion slipping off too easily. Undue pressure, forward, backward, or over the top of the saddle disconnects the parts.



2548. Davis, S. May 22.

[Provisional protection only.]

Saddle-bars.—Attached to the saddle-tree is a box or slotted piece, open at both ends and at the bottom. The bottom part and ends are shaped at a certain angle so as to retain or release at certain points an attachment which fits between the slotted piece and swings like a pendulum, such action agreeing with the angles of the slotted piece, giving ingress or egress at the points required, *i.e.* when the rider is thrown. The lower part of the attachment is formed into a crank-shaped boss, on each side of which is a stop pin, in which crank piece another crank piece is inserted, working freely, having at its lower part a loop with a roller which carries the stirrup leather, and forming one piece working in the said crank-shaped boss. This remains steady until the stirrup leather is thrown over the saddle, when the loop travels round the crank under the pins until it reaches their upper part, and is released and becomes freed from the pendulum piece.

2610. Lehmann, O., [Weissgerber, F.]

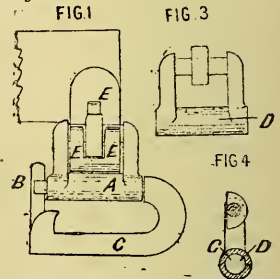
May 25.

[Provisional protection only.]

Girths.—A pair of elastic bands, preferably of steel, covered with leather or like material and provided at their free end with an ordinary strap-joint, are secured to the saddle-tree and pass under the right and left saddle flap over the body of the horse. One band is longer than the other so that the joint is at the side of the horse.

2611. Born, H. May 25.

Saddle - bars. — In the arrangement shown in Fig. 1, the "crank piece" A, provided with a cam and shown detached in Figs. 3 and 4, is suspended upon the hook piece E, attached to the saddle-tree, from which it is released on the rider being thrown over the saddle. Into the tubular portion D of the "crank piece" is inserted one arm of the stirrup-bar C, retained in position by the spring thumb-piece B, which however is overcome by the backward strain when the rider is dragged.

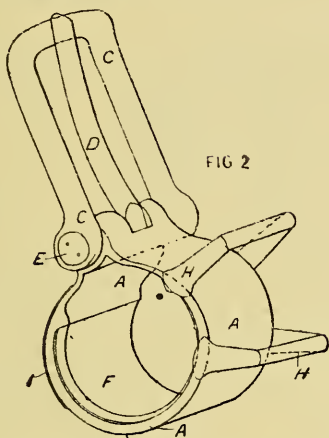


2627. Hunt, R. W. May 26.

[Provisional protection only.]

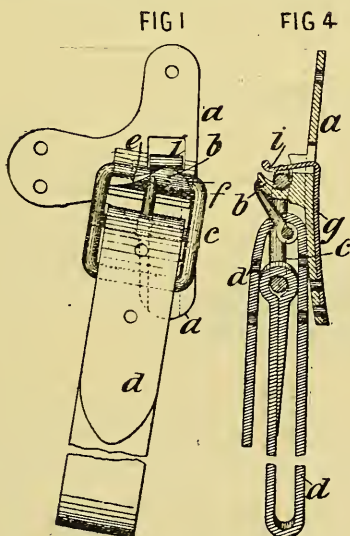
Saddle-bars.—A metal piece in the form of a pocket open at the top is secured to the saddle. In this is suspended a disc or hook to which the swivel for the stirrup-strap is attached. The disc or hook is released from the stirrup-bar if the pull thereon be in any other than a downward or partially downward direction.

2659. **Davies, S. E.** May 29.



Shaft-tugs.—A is the metallic body of the tug, secured by the buckle C, D to the back band, which also passes through the loops H. F is a replacable bed of leather or metal, a piece of leather I also being attached where the tug rubs against the saddle. The buckle is preferably countersunk for the ends of the bolt E. When the said bolt hole wears the metal is cut away and a bridge piece brazed or riveted over the bolt. In this case a bolt solid with the buckle may be used and bridge pieces placed through it. Modifications are shown and described.

2841. **Dancer, Sir T.** June 7.

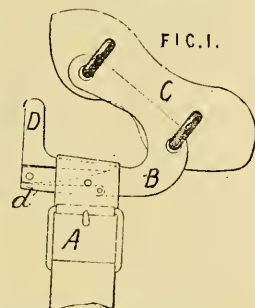


Saddle-bars.—The plate a is provided with a projection b, the front part being inclined at e and the hind part curved at f, while the upper part is recessed to receive the buckle c of the stirrup leather d, which is retained in position by the projecting end i of the spring g, which nearly meets the edge of the projection b. Should the rider be

thrown off on the opposite side, the spring i will give and release the buckle c. Should the rider be dragged, the buckle c, acting against the cam-shaped part e, will press against and raise the spring i and be thereby released.

3121. **Passmore, J., and Cole, E. C.** June 23.

Saddle-bars.—The bar B is suspended by two staples passed through its upper limb and secured to the plate C. Towards the rear end of the lower limb is pivoted the crank-shaped thumb-piece D, one arm of which normally lies below the stirrup-leather A. In the event of the rider falling backwards,



the thumb-piece D is turned on its pivot, against the spring d, and releases the leather. Should the rider be thrown over the saddle, the bar B is first turned upward on the staples, and the thumb-piece D then forced by the leather A, as aforesaid, and the leather released. In a modification, the rear end of the upper limb travels in an elongated slot on the rider being thrown over the saddle.

3145. **Lake, H. H.,** [Hüttemann, G., and Wackerow, C.]. June 25.

Saddle cloths are formed of a fabric of woven or braided horsehair bordered with leather, cloth, or india-rubber tissue. To enable the application of short horsehair the cloths are made in halves joined together by a seam or by pasting upon them a band of cloth, leather, or india-rubber. Over the adjoining edges is pasted, preferably by means of india-rubber putty, a band of strong texture, and above this is pasted a band of india-rubber tissue. This operation is repeated upon the opposite side of the cloth and the whole stitched through at the edges.

Abridged also in Class Weaving &c.

3249. **Morgan, J. A.** June 30.

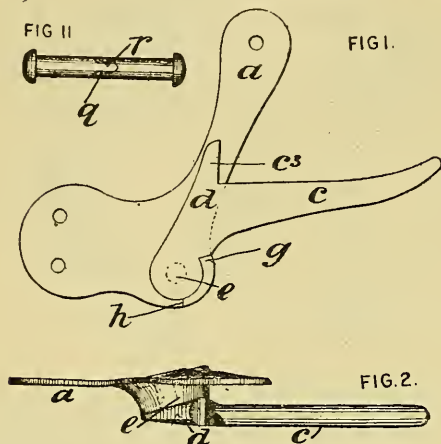
[Provisional protection only.]

Pads made of waterproof material that can be inflated with air are applied to saddles, collars, and harness generally.

3250. **Rees-Philipps, H.** June 30.

Saddle-bars.—In the arrangement shown in Figs. 1 and 2 the saddle-bar c, d is pivoted to the plate a by the inclined pin e, and is limited in its movement by the stops g, h. In its normal position, the upper face is nearly horizontal and the stirrup-leather resting thereon is retained by the shoulder c³

at the forward end and the slightly turned up extremity at the rear end, which latter, however, is not sufficient to prevent the leather slipping off in the event of the rider falling back. Should the rider be thrown forward, or across the horse the bar is turned on its pivot *e*, which being inclined



to the face of the plate *a* causes the bar to move outwards and so prevent the leather wedging between the bar and the plate. In a modification, two short bars turning in opposite directions are obliquely pivoted, as before described, to one plate, their free ends bearing against, and engaging with, each other, one being forked to receive the tongued end of the other as shown at *q*, *r*, Fig. 11.

3318. Odell, J. C. July 4. *Drawings to Specification.*

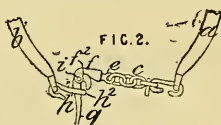
Saddle-girths and roller bands.—India-rubber threads are introduced in the course of manufacture, thereby affording the girth sufficient elasticity to adapt itself to variations in the size of the animal's body owing to the digestion of food &c.

Abridged also in Class *Weaving &c.*

3471. Goodman, F. B., [Minor, F. O.]. July 13.

Fastening hames.—The chain *c* is connected to the hame *a* in the usual manner, the other end being connected by the swivel junction *e* to the fastening hook *f*, *g* which takes into the loop *h* hooked to the other hame *b*. The two members *f* and *g* are jointed together at *i* and, when closed to fasten the hames, receive the bar *h*² of the loop *h* in the recess *f*² in the fork, and the corresponding recess in the member *g*. By turning the arm *g* outwards, as shown, the loop *h* is quickly disconnected in the case of fallen horses &c.

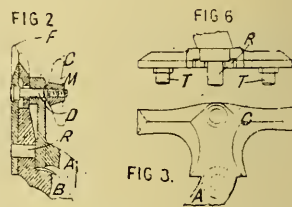
Abridged also in Class *Nails &c.*



3674. Sabatier, J., [Bariquand, J., & Son]. July 27.

Horse &c. clippers.—The left-hand lever *A* is in one piece with the guide-plates *C*, which has a hole for the tightening-bolt *D*, and on its under surface two guide pins *T*, Fig. 6, and a pivot pin *R*, Figs. 2 and 6. The bottom comb-plate *F* has four holes, one for the square end of the bolt *D*, two for the guide pins *T*, and one for the pivot pin *R*, and, with these in place, is fixed to *A*. The upper comb-plate has three slots, two for the guide pins *T* and one for the bolt *D*, and on its back edge a wide notch to receive the end of the right-hand lever *B*, by which it is made to reciprocate between the guide-plate *C* and the bottom comb *F*. Instead of one tightening-bolt two may be used.

Abridged also in Class *Toilet &c.*



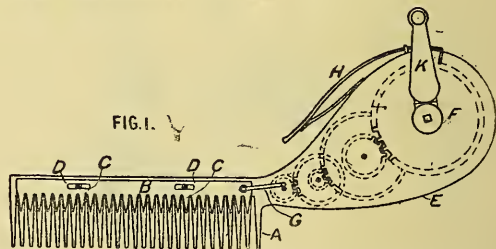
4041. Harvey, A., [Thompson, R. W.]. Aug. 21.

[Provisional protection only.]

Combined brush and currycomb.—A flexible brush surface of rubber, leather, &c., shaped to the hand, and with bunches of bristles attached, has loops or straps for fastening round the fingers and wrist, or may be made in glove form. Small currycombs are attached to the loops or backs of the glove fingers and the finger tips may be provided with pickers, preferably of wire loops.

Abridged also in Class *Brushing &c.*

4614. Bennett, W. E. Sept. 28.



Horse &c. clippers.—Relates to cutters for wool, hair, &c. A metal comb *A* has mounted upon it a row of teeth *B* guided by two pins *C* and slots *D*. Reciprocating motion is given by a driving-bar *G*, which is driven through gearing by a coiled spring in the drum *F*. A spring lever *H* allows the coiled spring to act at will. *K* is the handle for winding the spring. Instead of having the teeth of the comb *A* sharp two rows of cutting teeth such as *B* may be used, one or both of them being driven by the mechanism. The handle *E* may be fixed at the centre of the comb *A*, the driving mechanism being suitably modified. The length cut from the hair &c. may be regulated.

Abridged also in Class *Toilet &c.*

4659. Morris, C. F. C. Oct. 1.

[Provisional protection only.]

Harness, fastening.—Relates to a slip-hook applicable to hames, pole chains, traces, &c. Reference is made to Specification No. 4946, A.D. 1881. An arm is formed with an eye, shackle, or other means for connecting it to the part to be secured, at its inner end, the other being bent so as to form rather more than half a circle, the extreme end extending a certain distance beyond the centre line or axis of the main part of the arm, which is straight. To the extreme end of this bent part is pivoted a second arm similarly bent, the end of which extends beyond the point at which it is pivoted to the first arm, the inner surface of the rounded part of which is recessed to receive such extended part of the second arm, so that when the two arms are closed the circle is completed and forms an eye to receive the chain or other part. The main part of the second arm is also straight but slightly shorter than the first arm, to which it lies parallel when closed, the free end being formed to enable it to be readily grasped to be turned on its pivot, to release the chain, which will slip off the said short arm. A ring mounted on the long arm may be slid over the shorter arm to prevent their accidental opening, and such ring may be retained by a spring attached to the short arm.

Abridged also in Classes *Nails &c.*; *Road vehicles*; *Ships &c.*, Div. III.

4734. Bray, G. Oct. 4.

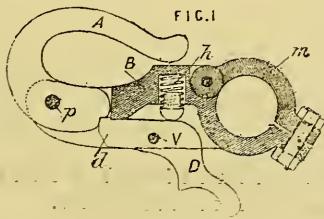
[Provisional protection only.]

Collars and fastenings.—To hold the whipple-tree a spring attachment is secured to the collar, which enables the same to be self-releasing, or in place of same, a solid wire or steel spring bent to the form to give a spring action is employed. A spring clutch-hook is attached to hold the pole chains and clutch on to the horse's collar. To facilitate the action of the above arrangements with the collar the hames are constructed in halves, the upper part being furnished with a joint controlled by a spring and held by lever clutch. The lower portions have slotted lugs. To one hame is secured a drop-clutch and to the other a stop. When brought into action, the collar is lowered on to the animal's neck, the spring at the upper part closing the hames, which are secured by the drop-clutch and held by the stop.

Abridged also in Classes *Nails &c.*; *Road vehicles*.

4741. Lampe, O. Oct. 5.

Slip-hook for traces.—The nose or beak A turns on a pin p in the body B of the hook and is held closed (as shown) by a lever D turning upon a pin r



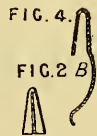
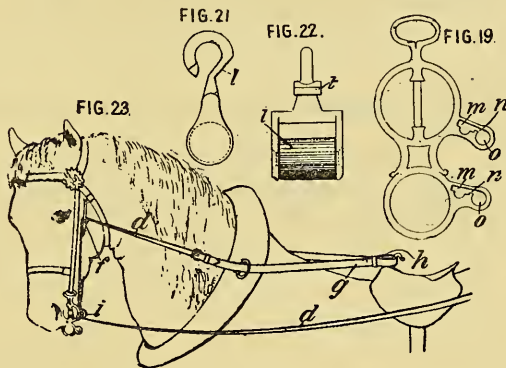
and acted on by a flat or spiral spring h. The projection d of the lever D engages the end of the beak A as shown. To release the hook the free end of the lever D is pressed upwards. The hook is attached to the whipple-tree by a clamp m.

Abridged also in Class *Nails &c.*

4767. Twigg, G. Oct. 8.

Horse clippers, protecting teeth of. A suitably-shaped flat piece of metal is stamped into a -shaped form as shown in cross section. This is then put over the teeth to protect them when not in use and during carriage &c. The projecting part B in the form shown in Fig. 4 acts as a spring to prevent the cap from slipping off endways.

Abridged also in Class *Hand tools &c.*

**4840. Mewburn, J. C.**, [Haury, A., Rourreau, H., and Guérineau, P.]. Oct. 11.

Bits and reins.—Frames or rings carrying pulleys (over which the reins pass) are combined with the bit so as to give greater control over the animal. Fig. 23 shows one arrangement. The pulleys i may be carried either by separate frames suitably fixed on each side of the bit, or by brackets on the cheek pieces of the bit itself, and one or two pulleys may be placed on each cheek piece, as desired. The rein d passes over the pulleys and over rollers carried in hoops or swivels f, and is attached to the double strap g having a loop h hooked to the saddle. Several forms of bits are illustrated.

Hook fastening for securing the rein to the bit in double harness. The rein passes over the pulley i, Fig. 22, carried by a frame terminating in a hook the front part t of which is of T form, the opposite part l being flat. The end t is passed through the opening m in the bit, Fig. 19, and the hook reversed so as to carry the flat part l past the projection n so that the hook is held in the opening n.

Abridged also in Class *Nails &c.*

4911. Clark, A. M., [Warren, E. K.]. Oct. 16. Drawings to Specification.

Whips.—Elastic rods, applicable as fillings for whips, and intended to be used "as a substitute for

"whalebone." The rods are composed of the stems or quill portions of feathers after they have been stripped; the stems are held together by a suitable external binding, either wire or thread; or they may be cemented or otherwise joined together. The stripped quills are used either entire or reduced to splints, and overlap and break joint with one another.

Abridged also in Class *Wearing-apparel*, Div. II.

5111. Carron, G. Oct. 29.

[*Provisional protection only.*]

Clothing for animals.—Magnets are built up of a number of thicknesses or layers of magnetized steel or metal. The plates are cut out into such shapes as will work up with the greatest advantage. They are coated with a resinous compound made with spirit which may be combined with a disinfectant. The magnets are placed between sheets of cloth, felt, flannel, &c.

Abridged also in Classes *Electricity &c.*, Div. I.; *Medicine &c.*; *Wearing-apparel*, Divs. II. and III.

5576. Feilding, T. H., and Jonsen, A. N.
Nov. 29.

[*Provisional protection only.*]

Clothing for animals.—Relates to coating or covering clothing for animals and other articles

or objects to afford protection from heat. A thin bright metallic coating or covering is applied to the article to be protected; it may be applied in the form of foil or leaf in such manner as to be brought into immediate contact with the surface of the article, and be fastened thereto with any adhesive mixture, or the metal may be deposited thereon from a solution, and could afterwards be brightened by burnishing or otherwise. The metallic substance or solution may be made of any metal or alloy, or combination of metals.

Abridged also in Classes *Agricultural appliances*, *Farmyard &c.*; *Buildings &c.*; *India-rubber &c.*; *Ships &c.*, Div. I.; *Wearing-apparel*, Divs. I. and II.; *Wood &c.*

5671. Bacon, W. J. Dec. 7.

[*Provisional protection only.*]

Stirrup leathers, suspending.—The suspender is made in three parts consisting of a metal loop of suitable form which lies outside the stirrup bar (and through which the stirrup leather passes freely), a metal tab plate which drops behind the stirrup bar, and an intermediate link or connecting plate lying across the top of the bar. This link is connected to the other parts by suitable knuckle hinge joints, the knuckles projecting on the under side so as to grip the stirrup bar when the link is canted by a downward pressure. The parts are so arranged as to be kept in place by downward pressure, the leather being detached by any upward strain.

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1893.

PATENTS FOR INVENTIONS.

ABRIDGMENTS OF SPECIFICATIONS.

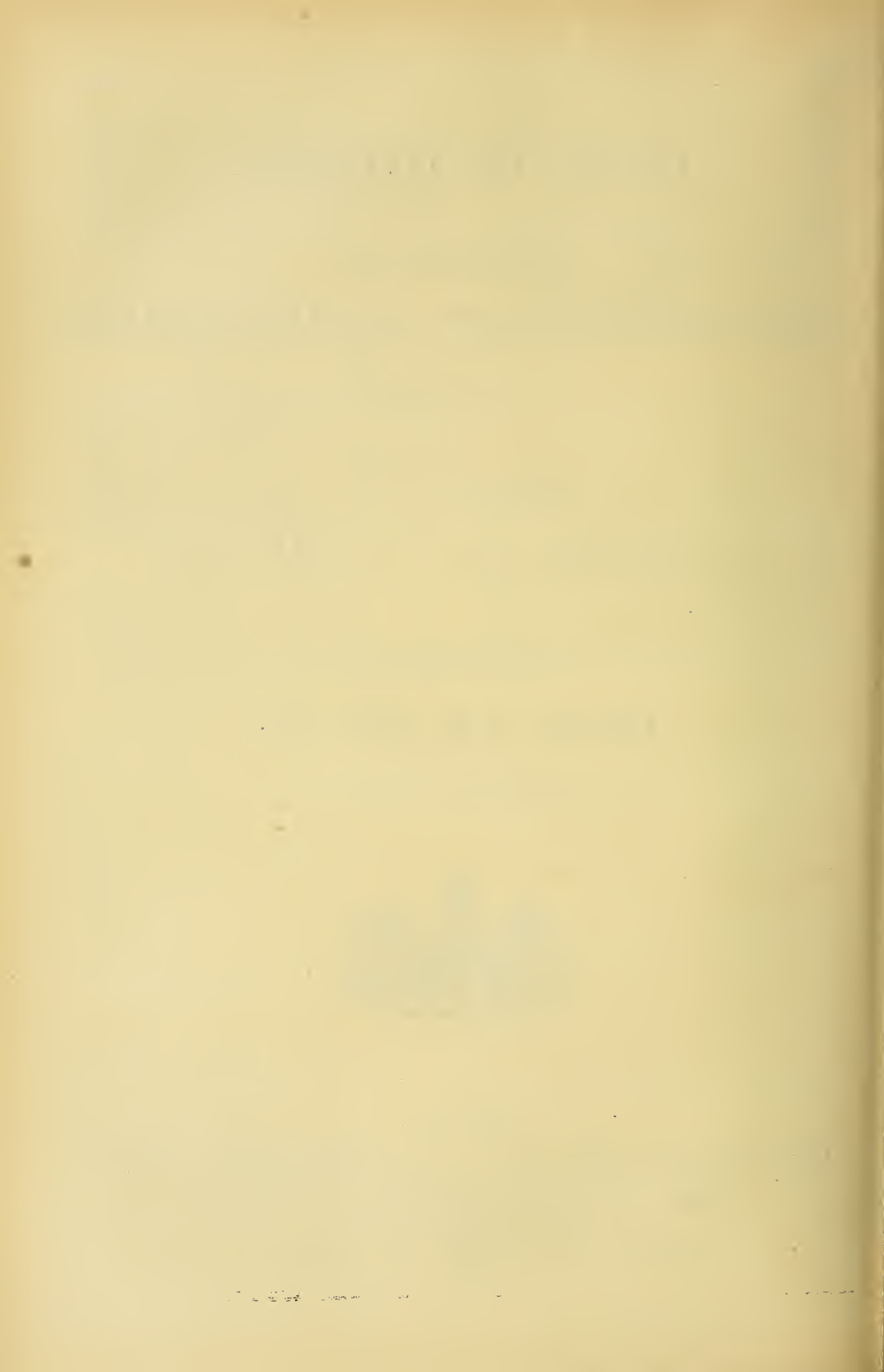
CLASS 62,
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EXPLANATORY NOTE.

The contents of this Abridgment Class may be seen from its Subject-matter Index. For further information as to the classification of the subject-matter of inventions, reference should be made to the *Abridgment-Class and Index Key*, published at the Patent Office, 25, Southampton Buildings, Chancery Lane, W.C., price One Shilling, postage (parcel post) Sixpence.

It should be borne in mind that the abridgments are merely intended to serve as guides to the Specifications, which must themselves be consulted for the details of any particular invention. Printed Specifications, price Eightpence, may be purchased at the Patent Office, or ordered by post on the Patents Form C¹ (to be obtained from any Post Office), no additional charge being made for postage.

SUBJECT-MATTER INDEX.

Abridgments are printed in the chronological order of the Specifications to which they refer, and this index quotes only the year and number of each Specification.

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Animal muzzles. *See* Muzzles &c.

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Bags, Saddle. *See* Harness &c.

Bearing-reins. *See* Harness &c.

Bits for animals. *See* Harness &c.

Blankets, Horse. *See* Harness &c.

Blindfolding-appliances for animals. *See* Harness &c.

Blinkers, Bridle. *See* Harness &c.

Boots, Horse. *See* Harness &c.

Breaking-in horses and other animals. *See* Training and breaking-in horses &c.

Bridles. *See* Harness &c.

Brushing-apparatus for cleaning animals. *See* Harness &c.

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Clothing for animals. *See* Harness &c.

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Currycombs. *See* Harness &c.

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bearing-reins. *See* bridles &c. below.

bits. '84. 5569. 9636. 13,081. 13,597. '85. 3337. 7087. 12,713. 12,902. '86. 6802. 11,434. '87. 11,030. 11,087. 13,958. 15,787. '88. 2898. 11,090. 13,390. 17,392.

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blindfolding-appliances. *See* bridles &c. below.

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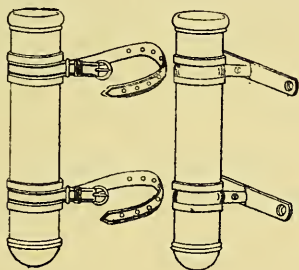
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HARNES AND SADDLERY.

Patents have been granted in all cases, unless otherwise stated. Drawings accompany the Specification where the abridgment is illustrated, and also where the words *Drawings to Specification* follow the date.

A.D. 1884.

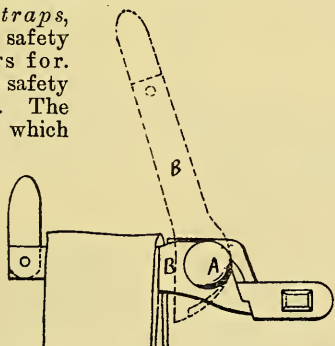
320. Peters, C. Jan. 2.



Whip sockets are turned in hard wood, and are attached by metal or leather fastenings, in the manner shown.

594. Mortin, T. J. Jan. 3.

Stirrup straps, suspending, safety saddle-bars for. Relates to a safety saddle-bar. The pin A upon which

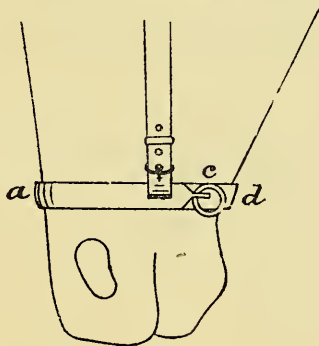


the saddle-bar B turns is inclined to the plate which is fixed to the saddle-tree in such a manner that as the bar turns upwards it also recedes from the face of the plate, and the strap readily leaves the bar.

797. Winder, R. Jan. 5.

Bridles for controlling horses and other animals. A metal band *a* is attached to the bridle so that it

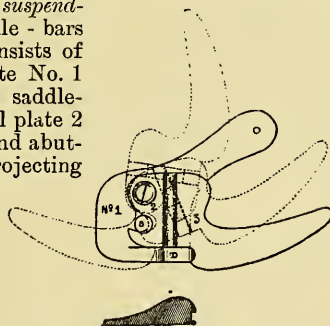
passes over the nose of the animal, where it is held in position by the straps *d*. The inside of the band *a*, against the animal's nose, is shaped hollow,



and it is connected to the reins by the rings *c*, so that a slight pull will press the sharp edges of the band against the animal's nose, thereby quietening it. A bit may be dispensed with when this band is used.

848. Cooper, M., and Cooper, J. Jan. 7.

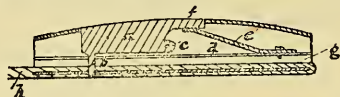
Stirrup straps, suspending, safety saddle-bars for. The bar consists of three parts, a plate No. 1 attached to the saddle-tree, another small plate 2 pivoted on this and abutting against a projecting



stud B on it, and a bar 3 which is hinged to the second plate and from which the stirrup

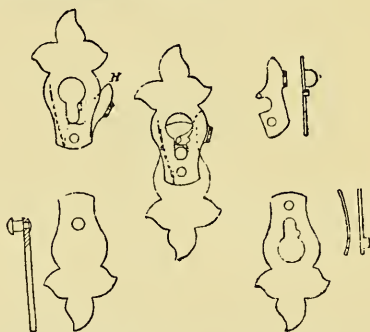
strap is hung. This bar can move round its hinge joint from the face of the other plates. There is a ledge D at the bottom of the first plate for holding the parts in position when mounting or riding; but, in case of accident, the movements of the pivoted plate and hinged bar immediately set the stirrup leather free. Several positions of the bar and plate under such circumstances are shown dotted in the Figure.

891. Knightley, G. Jan. 7.



Fastening harness. For connecting two straps, a metal box *d* is fitted to one of them having a lever *a* with a pin *b* pivoted at *c* and pressed upwards by a spring *e*; the end *f* is pressed, thereby raising *b*, the other strap is passed into *g*, and the pin *b* allowed to fall into one of the strap holes.

911. Mohrstadt, G. W. Jan. 8.

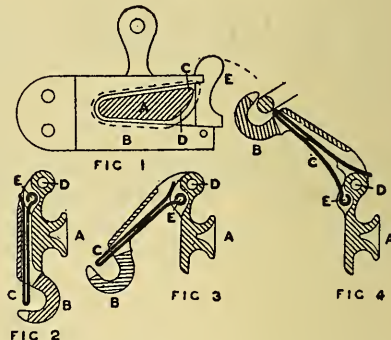


Fastening traces or bridles. Relates to a method of preventing the ordinary stud and slotted plate fastener as applied to stays &c. from becoming accidentally unfastened. The method is stated to be also applicable for fastening traces or bridles. At the front of the slotted plate, and capable of turning in the same plane with it, there is a flat piece of metal *H* having a slot on its inner side adapted to embrace the pillar of the stud, which is kept in its place by a spring piece attached to the slotted plate and bearing against this "securer." The stud is passed through the slotted plate and then this "securer" is turned round in its own plane, until the slot in it embraces the pillar of the stud and thus prevents it from becoming unfastened.

1519. Weston, B. S., and Wilton, H. S. Jan. 16.

Stirrup straps, suspending.—The stirrup strap is attached to a safety device connected by the grooved slide *A* or rollers to the saddle-bar *B*, Fig. 1. This

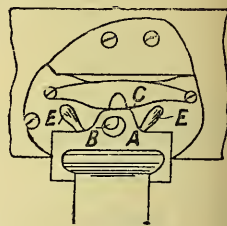
slide is made wedge-shaped, having its top corner *C* prolonged and its bottom corner *D* rounded away so that it can easily push aside the spring piece *E*, Fig. 1, when the rider is being dragged. A hook



or ledge piece *B*, Figs. 2, 3, and 4, is suspended from the slide *A* by the pin *D*, and has working inside it and hinged to the slide by the pin *E*, a spring bolt *C* which, in the normal position, locks the stirrup strap in the hook of the piece *B*. When the rider is thrown off, on the opposite side, the strap lifts the hook-piece *B* till the bolt *C* allows its escape from the hook and thus releases the horseman.

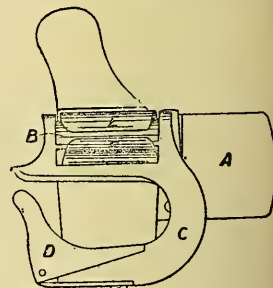
2205. Craddock, G. Jan. 26.

Stirrup straps, suspending, safety saddle-bars for. The stirrup strap is attached to a piece *A* having an eye which fits over a projection *B*, and a tongue which goes beneath a spring *C*. When the rider is thrown, the piece *A* slides up the rising butts *E*, releasing the eye and tongue and so freeing the strap.



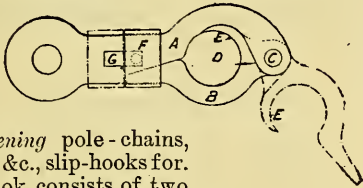
2310. Barnsby, J. A. Jan. 29.

Stirrup straps, suspending, safety saddle-bars for. The part *C* carrying the stirrup leather is made with a hinged lever *D* and a bar or tenon *B* which has a crescent cross-section so that it can pass between the two pieces *E* and *F* when *C* is turned up. The pieces *E* and *F* are fixed to *A*, which is attached to the saddle-tree.

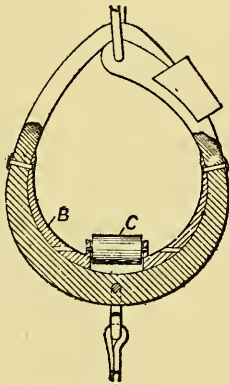


2533. Chorlton, I., and Holding, J. Feb. 1.

Whips.—The lash A is attached to the stick B by a swivel joint consisting of two metal ferrules C and D shaped with a shoulder, as shown.

2540. Morris, C. F. C. Feb. 1.

Fastening pole-chains, hames, &c., slip-hooks for. The hook consists of two parts A and B, jointed at C and bent to form an opening D for the reception of a chain. The part B is formed with an extension E, against which the chain presses, and so tends to keep the hook closed. This object is further attained by fastening the arm B to A by a ring F kept tight by a piece G of leather or other elastic material. Instead of the ring, a split spring button may be fixed to A, which will spring into a hole in B when the hook is closed. A special form of spring clip may also be substituted for the ring.

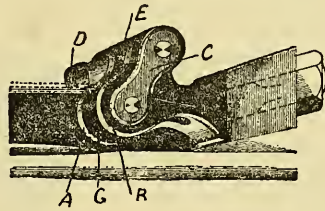
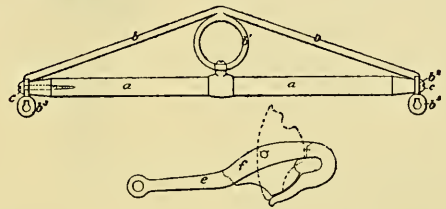
2738. Lake, H. H., [McFadden, P.]. Feb. 5.

Tugs, shaft.—A metal stirrup B is inserted detachably in the bottom of the tug, with lugs for a detachable axis, carrying an antifriction roller C, to work in.

2795. Walley, J. S. Feb. 6.

Fastening traces, draw bolts for. The fastening consists essentially of a frame with a pair of jaws A, B, through which passes a pin G on a link C which is actuated by a push D and kept in position by a spiral spring within the part E. The trace passes between the jaws A and B, so that the holes made in them and in the trace may be readily placed in a line and the bar G be made to pass through and secure them.

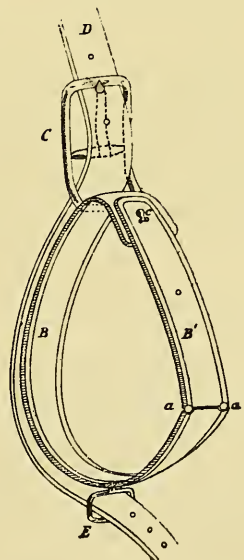
(For Drawing see next column.)

2795.**2902. Bray, G. Feb. 7.**

Fastening traces and pole-chains, hooks for. The whipple-tree is formed of the cross-bar *a*, strengthened by the stays *b*, which are supported in the middle by the ring *b*¹ and at the ends, which are formed with eyes *b*² and *b*³, by the screws *c*. The eyes *b*³ are for receiving the trace hooks, which are T-shaped at their free ends. The collar of the animal has fastened to it a special kidney link to which the drop link hook *e* connected to the pole-chain is secured. This hook consists of two parts, a fixed part or hook proper and a pivoted part *f* which works in a slot and serves to lock the kidney link before-mentioned securely in place.

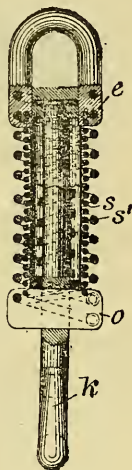
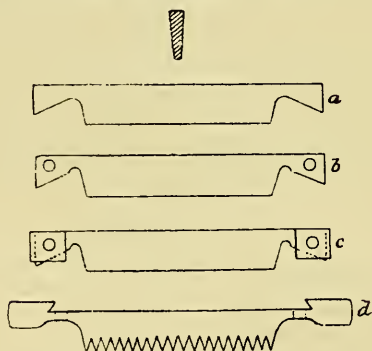
2945. Cottrell, J. Feb. 8.

Tugs, shaft.—The body of the tug is made of a bent strip of metal covered on each side by strips of leather B. To the metal strip at one end is connected another piece B⁴ by hinges *a, a*. On the piece B at the upper end is a small projection *c* working in a socket. A slot on B¹ fits over the projection, which is then turned half round and between two studs securely closing the tug. A buckle C enables the tug to be fastened to the back band D, which then passes down through a pivoted loop E, and may be united to the belly-band.



2939. Jensen, P., [*Sidén, J. T. B.*]. Feb. 8.

Fastening traces and pole-chains, spring attachments for. Relates to guards or spring attachments for draw-gear or pole-chains. Spiral springs s, s^1 are attached at each end to a plate, one plate o carrying a hook k and the other a ring. The hook is prolonged into a bar with a collar e at the free end; around the bar and fixed to the collar is a strong spiral spring. The collar works in a cylinder forming part of the ring. The smaller strains are taken by the outer springs s, s^1 , the heavy strains coming upon the spring placed round the bar within the others.

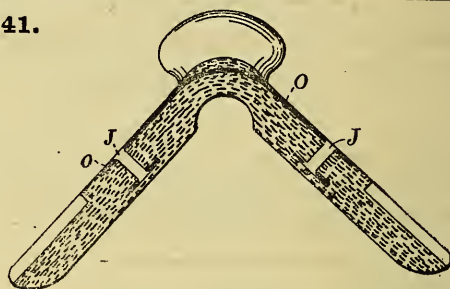
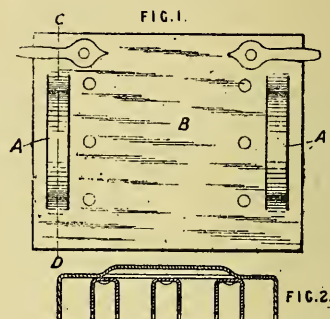
**3023. Tildesley, W. H.** Feb. 9.

Currycombs.—Blanks are cut from rolled or otherwise produced taper iron. These are then cut and punched into the forms shown by a and b . Pieces of metal are riveted on the ends of the blank, as shown by c , and it is then forged and teeth are cut upon it, as shown by d , to produce a finished comb ready for attaching to the back-plate.

3141. Stanley, J., and Lemassena, T. F. Feb. 12.

Collars; saddles; breeching; materials for making.—Collars, saddles, saddle-trees, cruppers, and other parts of harness are formed of scraps of leather by cementing them together, and pressing into the required shape at one operation. The Figure shows a saddle-tree constructed according to this method. The outside of the tree is covered with a layer of elastic substance O , fastened by means of bolts J .

(For Drawing see next column.)

3141.**3262. Wakelam, J., and Wakelam, S.** Feb. 14.

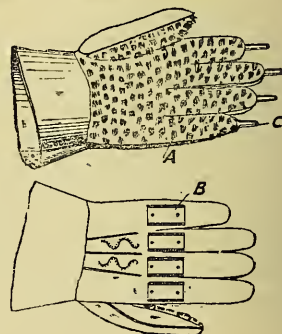
Currycombs.—The metal straps A , to which either a webbing or a rigid handle is attached, are formed from part of the metal of the comb itself, as shown in Fig. 2, which is a section of Fig. 1 along the line $C D$. By this means the straps are prevented from becoming loose or detached from the back B .

3379. Guest, W. Feb. 15.

Fastening; repairing.—The two ends of the belt, consisting of waterproof or ordinary leather, are connected together by bolting or riveting to a cover-string provided with a series of slots, which may be metal-eyeled. The bolt heads are preferably countersunk into the driving-surface. The method is applicable to repairing harness and other articles made of leather.

**3643. Justice, P. M.,** [*Harvey, A.*]. Feb. 20.

Currycombs combined with brushes. The brush is flexible and in the form of a glove. Bristles A are attached to the palm, and small currycombs B to the back of the glove. Wires C ,

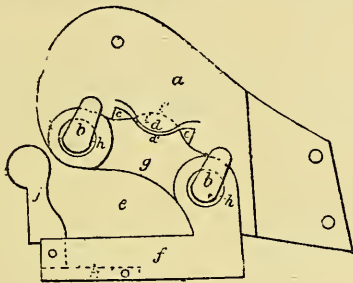


bent as shown, are attached to the tips of the fingers and serve as pickers.

4105. Winder, R. Feb. 28.

Bridles for controlling animals. Relates to an improvement on the invention described in Specification No. 797, A.D. 1884, and consists of a leather nose-band affixed to the bridle. This nose-band presses upon the nose-bone of the animal and serves to guide and restrain it. The ordinary bit may be thus dispensed with.

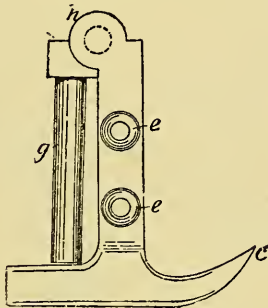
4123. Damarell, A. Feb. 29.



Stirrup straps, suspending, safety saddle-bars for. The metal-plate *a* is firmly fixed to the saddle-tree and is made with two hooks *b* and a recess *c* having a projecting tongue *d*. The saddle-bar *e* has two branches *f* and *g*. The branch *f* is horizontal and carries the stirrup leather, and is fitted with a pivoted bar *j* held upright by a spring *k*. The branch *g* is curved and is formed with two eyes *h* which fit over the hooks *b*, and with a tongue *d* which fits beneath the part *d* above mentioned.

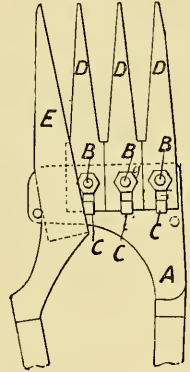
4583. Reynolds, W. March 8.

Repairing.—Relates to a combination hand tool. A gouge, such as is used for boring holes in leather, is hinged at *h* to the shaft of a hammer which forms also a nail-drawer and a pick *c* for removing stones from horses' hoofs. Nuts and screws *e* for repairing broken traces &c. are fitted in holes in the hammer shaft. The gouge is covered by a metal cap *g* to prevent injury to the hand.



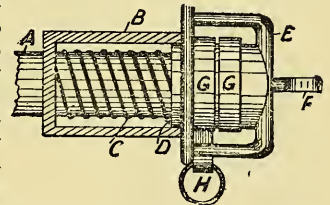
4641. Mewburn, J. C., [Guillaume, F.] March 10.

Horse clippers and the like.—One limb of the shears carries a plate *A* upon which are pins *B, B* and corresponding projections *C, C* equal in number to the cutters. Each of these cutters *D, D* is made separate, and has a slot at the end furthest from the point, into which fit the pin and projection; a nut then screws on to the pin and holds the cutter firm. Another method is to have a shoulder on the plate which prevents the cutters from turning, and in lieu of the slot simply a hole for the pin. The other limb of the shears carries a single cutter *E* fixed by screws or in the same way as the others. The cutters can thus be easily removed for cleaning or sharpening.



4664. Bingham, F. J. March 10.

Fastening pole-chains. Relates to a slipping-device to allow of the easy removal of a fallen horse &c. The invention is chiefly applicable to two-horse vehicles. Near the end of the pole *A* is a drum *B*, enclosing a spiral spring *C* which rests against a fixed collar *D* on the shaft. On the front of the drum is fixed a bar or clasp *E* having a ring *F* on its front end. The end of the pole extends to and presses against the front of the clasp *E*. By taking hold of the ring *F*, and pulling the drum *B* forward, the rings *G, G*, carrying the eyes *H* to which the collar chains are attached, may be slipped on or off the end of the pole. On releasing the ring *F*, the spring carries back the drum *B* to its original position.



4772. Howell, J., and Anderson, J. W. March 12.

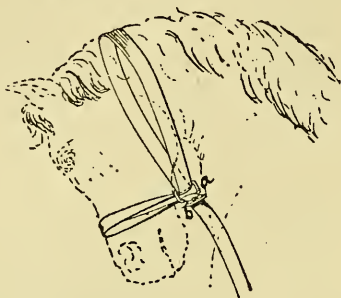
Whips.—The handles of riding whips &c. are coated with silver, gold, or other suitable metal, either directly or preferably after a coating of copper has been first applied.

5462. Powney, J. March 26.

Lining and padding; saddles; pads.—Linings for saddles and pads are made hollow and are stuffed

with flock or hair, and further contain spiral springs. The under surfaces are porous, and the leather sides are perforated so that by their action during the natural vibration complete ventilation is ensured

5463. Wright, J. March 26.

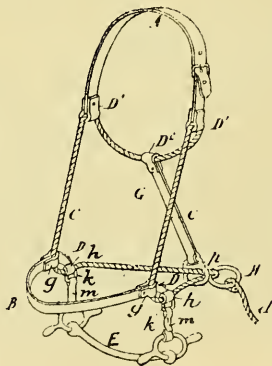


Halters.—The halter consists of a webbing, rope, or strap with a metal ring *a*, and an adjustable sliding piece *b* on the rope &c. The ring is placed over the horse's neck and the rope &c. doubled and passed through the ring and round the horse's nose. It is then drawn up tight, and the slide pushed up towards the ring to secure the halter.

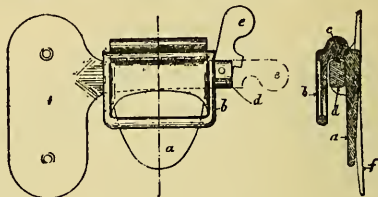
5569. Lake, W. R., [*Lighthouse, J. C.*] March 27.

Halters; bits.—

In halters for horses and other animals, the head-piece *A*, nose-band *B*, and billet *G* are made of leather, and the other part of the halter is of rope. The rope *C* is in one piece, and passes through sockets in the clamps *D*, *D*, *D*¹, *D*¹, *D*², which are attached to the ends of the nose-piece, head-piece, and upper end of the billet respectively, and, after passing through the loop *p* at the lower end of the billet, the rope is connected to the ring *H* to which the snaffle *d* is fastened. The clamps *D* &c. each contain, at right-angles to one another, two sockets *g* and *h*, which are provided with sharp-pointed spurs for holding the rope when the clamp is pressed. A bit *E* can be attached to the clamps by straps *m* passing through loops *k* underneath the lower sockets *h*.



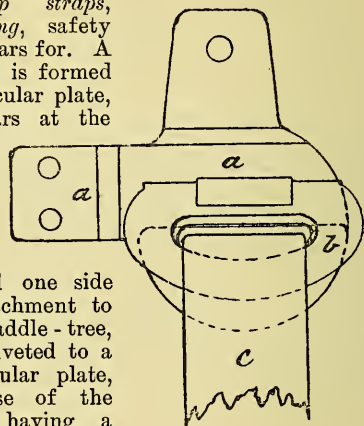
5733. Bacon, W. J. March 31.



Stirrup straps, suspending, safety saddle-bars for. The stirrup leather is attached to a frame *b* hinged by a knuckle-joint *c* to a tab-plate *a* which rests against the saddle. The frame and the tab-plate lie on opposite sides of the horizontal bar *d*, firmly fixed at its front end *f* to the saddle-tree and provided at its rear end with an ordinary safety-spring latch *e*.

5941. Lavender, F., and Lavender, G., [*trading as Fairbanks, Lavender, & Son*] April 4.

Stirrup straps, suspending, safety saddle-bars for. A socket *a* is formed by a circular plate, with ears at the

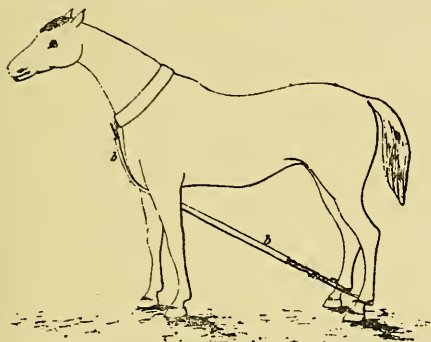


top and one side for attachment to the saddle-tree, being riveted to a semicircular plate, the base of the socket having a curved form similar to two "OG" lines reversed and joined end to end. A hinged suspender *b* has one side solid and fitting in the socket *a*, its base having the same form as the bottom of the socket, and the other side of the suspender is made with a loop for the strap *c* attached to the stirrup. The downward pressure on the stirrup and strap tends to keep the solid wing in the socket, but in case of accident the stirrup will be perfectly free. The front plate of the socket is indented, and a recess formed in the wing to prevent the stirrup from being too easily released.

5946. Wright, R. April 4.

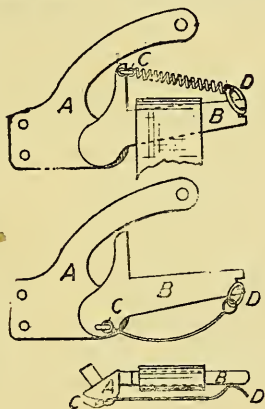
Hobbles for preventing kicking. The hobble consists of two steel or iron hooks, covered with leather, which are placed round the fetlock joints of the hind legs of the horse. The hooks are made to spring open when being put in position, but afterwards they close again, so that the horse's

legs cannot become free. These hooks are attached to a cord or strap *b*, which is carried forward between the fore legs of the horse and attached to the collar on the horse's neck.



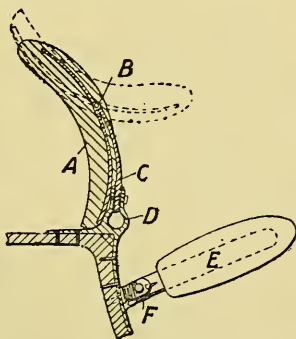
5985. Rees-Philipps, H. April 5.

Stirrup straps, suspending, safety saddle-bars for. The saddle-bar is in two parts, one *A* which is riveted to the saddle-tree and the other *B* carrying the stirrup leather. The two ends of this piece *B* are connected by some form of spring which is fixed at one end *C*, as shown. When the rider is thrown the stirrup strap presses on the other end of the spring *D*, unhooking the ring as in the first two Figures, or merely pressing the spring outwards as in the third Figure, thus becoming free and releasing the rider.



6384. Cawdle, T. April 15.

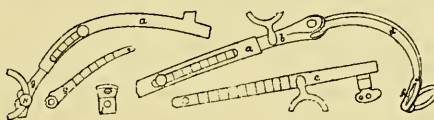
Saddles.—Relates to crutches for ladies' saddles. The top crutch consists of two parts, the upper part *A* being hinged to the top *B* of the lower part *C*, which itself is hinged to the socket *D*. The bottom crutch *E* is similarly hinged at *F*. When the rider is thrown the dress is disengaged by the turning of these parts on their hinges.



6473. Abel, C. D., [*Soc. de Credit à l'Industrie, au Commerce, et aux Travaux Publics*]. April 17.

Traces; materials for making.—The binding-cement of rhea fibre, ramie, &c. is stated to be mainly composed of three substances, named in Specification No. 763, A.D. 1883, "pectose," "cutose," and "vasculose." In the present process only the "pectose" is removed, by ordinary retting; the material is then subjected to combing in ordinary apparatus and afterwards spun. The threads produced are applicable to the manufacture of traces and other articles.

6812. Groth, L. A., [*Mersch, F.*]. April 25.



Collars; fastening collars and hames. The collar is built up of different parts so that its dimensions can be altered to suit the neck of any horse, the adjustment being obtained by having the ends *b, g, c* of the hames sliding in the middle parts *a* and fixed by a screw passing through a slot in the hollow ends of these middle parts. The two halves of the collar are joined together at the bottom by a screw *H* with a ring attached, connecting the two ends *g* together and to the block *I*, and at the top by a band *d* which is hinged to the sliding part *b* at the top of the hame, and has a slit *f* which passes over a pin *e* on the top of the sliding part *c* of the other hame.

6881. Allatt, H. T. W. April 28.

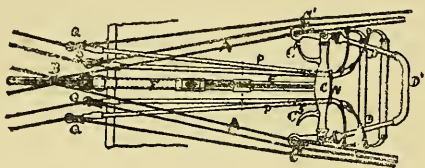
Hobbles.—A rope is fastened at one end *A* to the saddle and passes through loops in the boot-shackles *B* and *C*; the other end is then passed through the loop *D*, drawn tightly so as to bring the legs of the animal together, and then fastened to the stirrup *E*.



6992. Warth, A. April 29.

Bridles; rein-holders.—Relates to means for holding and guiding reins. A vertical spindle is fitted into a tube which is attached to the vehicle, as, for instance, in front of the dashboard. To the top of the spindle is pivoted a hollow rod *F* in which a solid rod *E* slides. The position of the rod *F* can be fixed by a set-screw, which passes through a projection on the rod and screws against

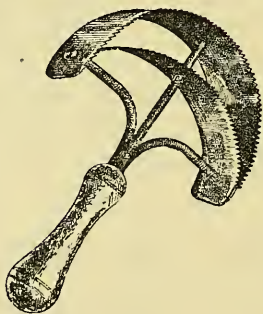
the vertical spindle. A handle C carries hooks C¹ on its ends for holding the reins A, which are provided with a series of holes, and also between the hooks are projecting curved branches C² which serve as



rests for the hand. This handle is pivoted to the back end of the sliding rod. Opposite the horse's tail the reins come close together, the one passing through a loop B on the other. A strap D, provided with a handle D¹ and projecting rearwards, is connected to the opposite ends of the handle C. When used for driving two or more horses, a bracket N, pivoted to the end of the sliding bar below the handle, is connected to the additional reins by means of straps P provided with hooks Q at their extremities. There are also supplemental reins for controlling the horses without moving the main reins.

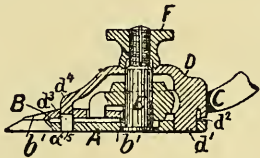
7193. Wyatt, T. H. May 3.

Currycombs.—Two semicircular steel blades are attached to a wrought-iron frame fixed to a suitable handle. One edge of these blades is cut with teeth as shown for use as a currycomb, while the other edge is left plain for use as a horse-scraper.



7238. Lake, H. H., [Carleton, C., and Noble, G. H.]. May 5.

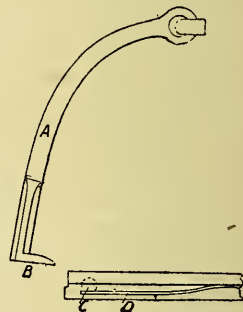
Horse clippers and the like.—The parts are so arranged as to enable them to be readily taken to pieces, and put together again by unscrewing a single thumb-screw. The comb-plate A, cutting-plate B, actuating-lever C, and cover D are held together by the bolt E, which passes through a hole in the comb-plate and is held firm by a flanged head and a projection which fits into a corresponding slot. The cutting-plate rests on narrow bearing surfaces b¹, b² on the comb-plate. The bolt E passes through a boss on the actuating-lever C, which is held down by a pin on the bolt, or by a spiral spring between the



cover and the boss. The end of the lever C beyond the boss turns down and enters a slot in the cutting-plate, by which means the plate is reciprocated. The cover is put on over the bolt E, and a projection d¹ enters a hole in the comb-plate, while a small projection d² rests upon the plate. The other end of the cover d⁴ is bent down and fits into a groove in the cutting-plate, forming a guide for the same. In the centre of this groove is an oblong slot through which a projection d³ on the cover passes, and is fixed in a hole a⁵ in the comb-plate. The oblong slot is sufficiently long to allow of the reciprocation of the cutter, and the projection d³ thus acts as a stop to that plate. The end of the bolt E is threaded and slit, and provided with a thumb-screw F to bind the whole together, the slit serving to keep the screw firm. The two handles, fixed and moving, are exactly symmetrical so as to avoid a tendency to twist. The wooden handle is held firm by fins on the metal tang, and the ferrule is saw-cut, screw-threaded, and slightly tapering so as to screw tight in case of shrinkage. The lower side of the comb-plate is grooved to prevent its adhering to the skin.

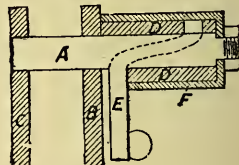
7360. Miller, W. J., [trading as Owen & Co.]. May 7.

Stirrups.—One leg A of the stirrup is attached at the top so as to move freely, and has a projection B at the bottom which forms a spring catch with the button C and spring D attached to the tread. If the rider should be thrown the severe strain upon the side A unfastens the catch and releases the foot.



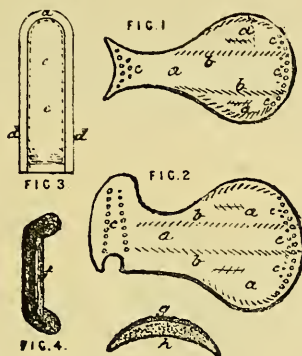
7538. Suckley, T. May 10.

Fastening traces, draw-bolts for.—Relates to a fastening which is suitable for attaching horses to vehicles, or for other purposes. It consists of a bolt A passing through a plate B into a second plate C. To the upper plate a cylinder D is fixed, surrounding the bolt and having a curved slot (indicated by dotted lines) in which a bar or handle E attached to the bolt slides. When this handle is pulled round it travels up the slot and raises the bolt, thereby opening the fastening. The cap F attached to the bolt covers the slot when the bolt is shot out and excludes dirt.

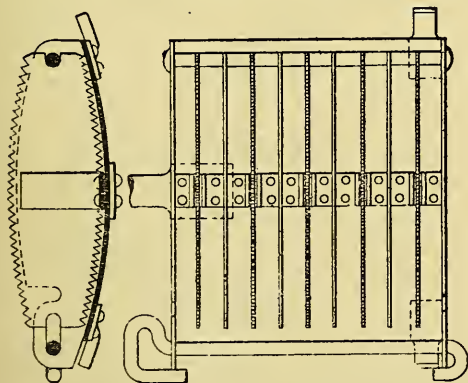


7545. Woolley, W. May 10.

Saddles; lining and padding.—The saddle is formed by cutting out a piece of leather *a*, Figs. 1 and 2, of the shape shown, and attaching it to the "head" and "candle" of the "saddle-tree" by means of wrappering, both being nailed down, and also to the "bellies" of the tree by stitching to wrappering, which is itself securely nailed to the tree. In Figs. 1 and 2 *b* shows the stitches and *c* the nails. In ladies' saddles, the pommel, Fig. 3, is formed of similar materials, the leather being pressed as shown in the section, Fig. 4. *d* and *f* show this stiff leather, and *c* is the top leather sewn thereto. The "knee pad" is formed by pressing felt *g* in a mould to the required shape, filling in with composition *h*, and covering it in the usual manner. The "panel" is formed by laying together and sewing the lining, facing, and panel side at one operation, then filling from the outside, and sewing down to the panel side.

**7643. Goldfrap, H. C. S.** May 13.

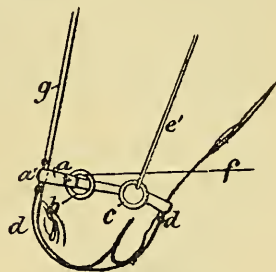
Nosebags.—The nosebag is suspended by a strap which passes through a ring on a head-strap and is attached to the saddle. The bag is also connected by another strap with the bottom of the collar. The first strap enables the horse to reach the food easily, and the latter prevents the tossing of the nosebag.

7696. Kleinstück, F. G. May 14.

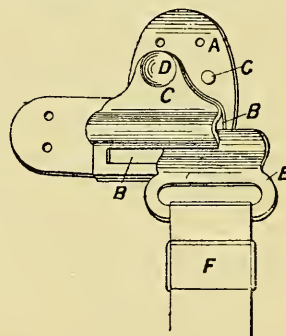
Currycombs.—Relates to a currycomb with exchangeable two-sided combs. The combs are elliptical in shape, and have teeth on each side. They are attached to the holders by keys, one movable and the other stationary, which enter slots in the ends of the combs.

8392. Calley, S. May 29.

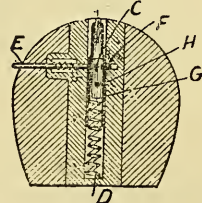
Bridles; muzzles.—A band *a*, which may be lined with leather, is fitted round the nose of the animal. This band has a loop *a'* in front, projections formed with rings or carrying rings *b* at the side, and rings *c*, to which a bit may be attached, at the ends. A curb chain or strap passes beneath the jaw of the animal and connects the two rings *c*, and to this chain a muzzle *d* may be attached at one end, the other end being attached to the loop *a'*. All these parts are supported from the headstall by the straps *e'* and *g*. The guiding-reins *f* are fastened to the rings *b*, and are either crossed or are passed through rings beneath the neck of the animal; they also pass through other rings on a collar, which thus prevents any friction between them and the neck.

**8593. Buxton, N.** June 4.

Stirrup straps, suspending, safety saddle-bars for. The plate *A*, riveted to the saddle-tree, carries the parts *B* and *C*, which are firmly riveted together, swing from the plate *A* upon the pivot *D*, and support the piece *E* to which the stirrup strap *F* is attached. The pieces *C* and *E* are curved as shown, so that either an upward turn of the stirrup strap and piece *E* or a sliding motion, as indicated in the Figure, disconnect the piece *E* from its support and so release the stirrup. The pieces *B* and *C* by turning upon the pivot *D* prevent the disconnection of the stirrup strap in such cases as when the animal rears or takes a fence. Stops *G* limit this pivoting motion, which may be applied to any of the usual forms of saddle-bars. The pivot may be assisted by two flanges, each working on a block and sharing the weight of the pivot if desired.

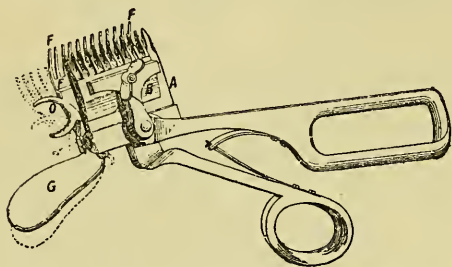
**8667. Jensen, P., [Schulze, W.].** June 6.

Spur carriers.—The spur shank *C* is fitted with a helical spring *D* which presses it outwards. A pin *E* enters the side of the heel, curves round the shank, and presses into a hole *F* by means of a spring, thus keeping the



spur hidden. When required to be used, the pin E is pressed inwards, which causes its end to leave the hole F; the spring D then forces the spur outwards until the pin E engages another hole G, fixing the spur in its outward position. A stud H, working in a groove in the box, prevents the shank from turning.

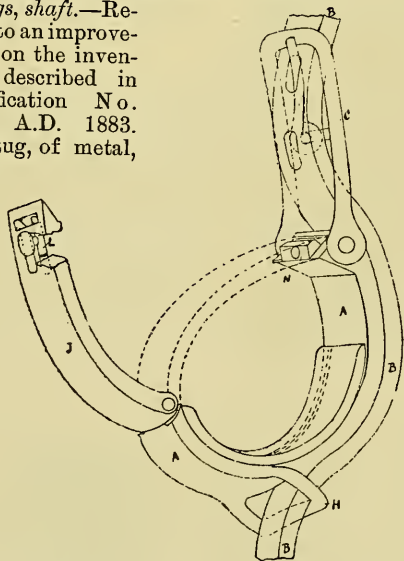
8700. Bown, W., and Capewell, G.
June 7.



Horse clippers and the like.—The best form of the clippers is shown in the Figure, and the improvement consists in pivoting to the back cutting-plate A, a comb-plate F capable of adjustment at various distances. Between the plates A and F a spring may be fixed tending to separate them. An extension G of the comb-plate is held in the left hand while the fore-finger is placed in the loop O at the end of a lever on which is a wedge-shaped piece regulating the distance between the comb and clippers. The clipper levers are formed and actuated like those of a pair of scissors.

8920. Davies, S. E. June 13.

Tugs, shaft.—Relates to an improvement on the invention described in Specification No. 2659, A.D. 1883. The tug, of metal,

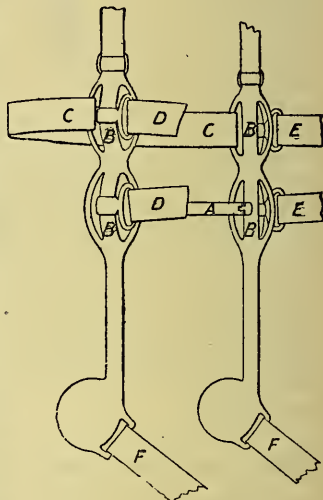


is made with the outside in two parts, one part J being hinged to the other part A. The free end

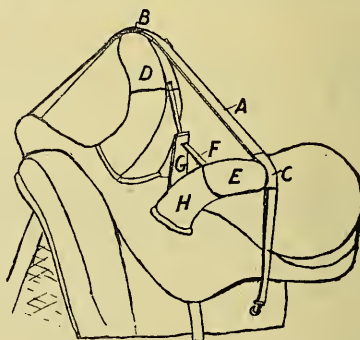
of the hinged part J falls upon a wedge-shaped abutment N, upon which the strain is thrown, and the two parts are locked together by a catch or bolt L operated by a spring. The strap B passes between the tug and saddle, through a "Tilbury" or other equivalent buckle C, and a loop H on the bottom of the tug.

9636. Tergolina, V. Count di. July 1.

Bits; bridles; martingales.—The bit consists of a mouth-bar A, which is either rigid or hinged with a stop as shown, and which is also screwed and further secured by some form of fastening to the two lower elongated cheeks B. The upper pair of cheeks are connected by a nose-band C, which consists of a metal chain enclosed loosely in a covering of leather or rubber &c. The straps D, E are the extremities of the forked reins used with this bit, and the straps F form the martingale.



10,348. Smith, J. July 19.



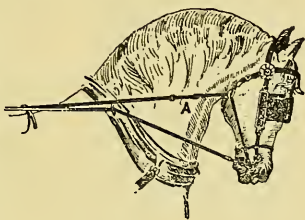
Saddles.—To prevent ladies' skirts from hooking on to the pommels when the rider dismounts or is accidentally thrown, an elastic band A is employed, hooked at the ends to each side of the saddle. This band passes through two sleeves B, C attached to the leather caps D, E which fit on the pommels and held on by straps F, G, the latter of which is secured by the screw of the leaping-head H.

10,788. Laurence, R. July 30. *Drawings to Specification.*

Saddle-bags.—The bag is formed in two parts telescoping into each other so as to vary the capacity, and connected together by side straps. The parts are curved to suit the back of the animal.

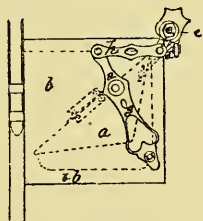
10,842. Hartley, R. Aug. 1.

Bridles, bearing-reins for. The flat and the round part of the bearing-rein are connected by an elastic strap A with a metal loop at one end, to which the flat part of the rein is fixed, and a hook at the other to take into a ring attached to the round part of the rein.



10,878. Stubbs, J. S. Aug. 2.

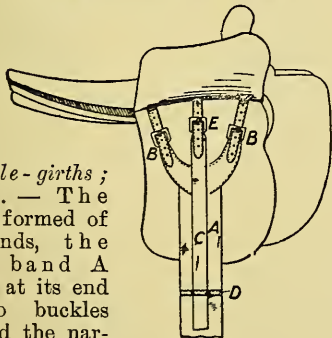
Bridles, blinkers for. Restive horses are quieted by employing movable flaps actuated by suitable cords to cover over the animal's eyes. The Figure shows a blinker *b*, to the inner side of which is hinged a triangular flap *a* actuated by a lever which is connected to the shaft *e*.



This shaft passes across the head of the animal, and is similarly connected with a second hinged flap at its other end. A cord attached to each end of the pivoted lever *g* moves the shaft *e* by the intermediate levers *h*, but any equivalent device may be used. A spring may be employed to hold the flaps either in the open or closed position.

11,571. Westwood, H. Aug. 23.

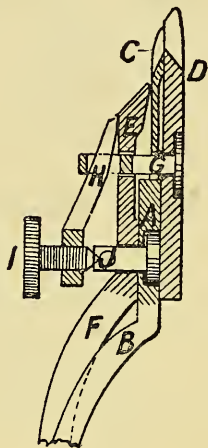
Saddle-girths; fastening.—The girth is formed of two bands, the broad band A carrying at its end the two buckles B, B and the narrow band C, capable



of sliding upon it through the loop D and furnished with a third buckle E. These two bands are attached by their buckles to three straps fastened to the saddle as shown.

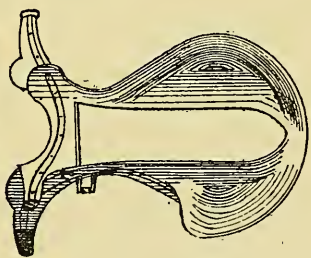
11,585. Lake, H. H., [Bérard, T.]. Aug. 23.

Horse clippers and the like.—The extremity A of the handle B imparts lateral motion to the comb-like cutter C, which slides between the similar fixed cutter D and the plate E attached to the fixed handle F. The comb D and the plate E are drawn together by the bolt G and the tongue H passing through a hole in its extremity. The other end of the tongue H is tapped to take a screw I, the conical point of which bears against the end of the bolt J, the latter passing through the plate E and forming a pivot for the handle B. The screw I thus serves to draw the comb D and the plate E together; two small screws at each side of the bolt J also connect them. In a modification, in order to avoid friction the movable handle is pivoted between two sharp-pointed screws, one of which is screwed into the comb D and the other into the fixed plate E. The head of the latter takes the end of the screw J.



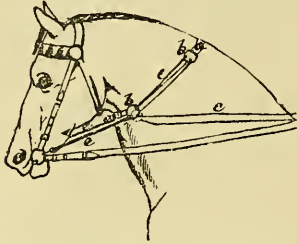
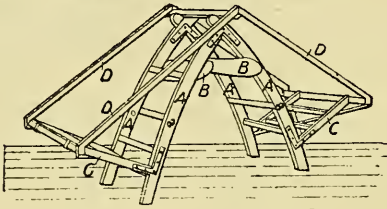
11,939. Bach, E., and Bach, W. B. Sept. 3.

Saddles.—Relates to side saddles. The tree is cut back or hollowed out at the edge on the off-side under the off-head with the adjacent "burr" or projection; the gullet is considerably cut back so as to allow the saddle to be placed well forward, and on the sides of the rear of the saddle the upper or seat belly, which may be formed of lighter wood than the lower frame, is formed with hollow flanges rising from the usual or lower frame or belly-part and joining to each side of the cantle and to the off-head.



12,074. Walley, W. O. Sept. 6.

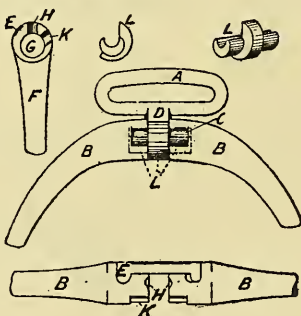
Bridles. — The horse is controlled by pressure upon its windpipe. This is effected by the two bands *a, a* having rings *b, b* through which the cord or strap *c* passes. Springs *e, e* are placed as shown so as to immediately remove all pressure on the throat when the cord or strap *c* is relaxed.

**12,205. Mosley, J. E. P.** Sept. 9.

Pack-saddles consist of a wood or metal framework built up of the two underframes *A, A*, which carry the pads *B, B* to rest upon the animal's back, and of the two side frames *C, C* fixed to the parts *A, A* at the bottom and held rigid upon them by the tie-rods *D, D*. The ordinary load is placed upon the parts *C, C*, or either one or two persons may be carried as desired.

12,376. Gibbons, C. K. Sept. 13.

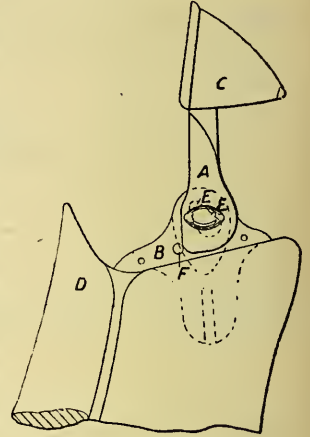
Stirrups. — The loop *A* is made separate from the stirrup proper *B*, and is fitted with a pin *C* at right angles to the prolongation *D*. The stirrup bow *B* is divided at the top and joined by a metal strap *E*, fixed at one end and provided with a pin working in a slot at the other; this arrangement allows a certain elasticity of the sides. The sides *F* of the bow have recesses *G, H*, and *K*; *H* is circular to fit against the part *D*, and *K* is shaped to correspond with the pin *C*. A piece *L*, to give further rigidity, fits partly beneath the pin and partly against the front of the part *D*. When a fall takes place, the sides *F* of the bow *B* are strained apart, and the loop *A* thus easily swings forwards, carrying the piece *L* with it, and as soon as the



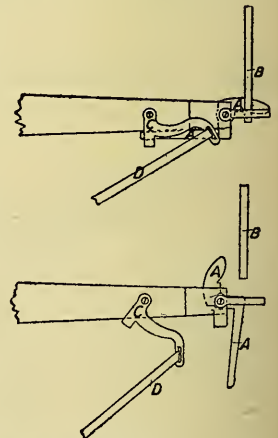
groove in the piece *L*, the pin *C*, and the slot *K* are in a line, the pin is free to leave the slot and the stirrup becomes detached. A modification may be made by fixing the pin to the stirrup proper and forming the slot upon the loop *A*.

12,698. King, R. Sept. 23.

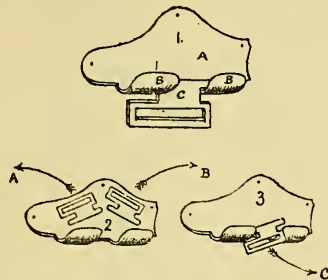
Collars; fastening collars. The object is to fasten together the ends of open horse-collars. The Figure shows the inner face of the right side of the collar with part of the connecting-device, which consists of a stem *A* provided at its lower end with pivots to turn in metal sockets formed in the parts *B, B*, which are securely fixed below to the collar, and carrying at its upper end the cap *C* which fits over the ends of the "pipe" *D*. The pivots have at their ends projections *E, E*, of which the left projection is oval and the right pear-shaped as shown in dotted lines, the openings of the sockets being of a similar shape. When fastening the collar the right projection is passed into its socket and turned round in it, the pin *F* being inserted to prevent its subsequent removal. The stem *A* is now pulled until the left projection enters its socket also, when the stem is turned down until the cap *C* covers over the ends of the pipe *D*. The hame straps are then buckled across the stem, and the fastening is complete.

**12,707. Emanuel, J. I.** Sept. 23.

Runaway horses, releasing; fastening traces to vehicles. Instead of the usual hook a bent lever *A* is employed, one end holding the trace *B* while the other is held by a second lever *C* from which a cord *D* passes. To detach the animal all that is required is to let go the reins and pull the cords *D* (of which there are two, one for each trace), when the levers will rotate and free the traces as shown.



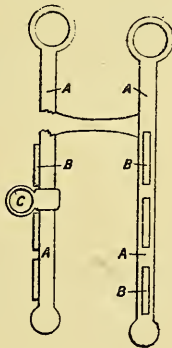
12,966. Haslam, T. J. Sept. 30.



Stirrup straps, suspending, safety saddle-bars for. The plate A, Fig. 1, is fixed to the saddle-tree, and has turned-up edges B, into which fits a piece C carrying the stirrup strap. A and B, Fig. 2, and C, Fig. 3, show how the stirrup strap is freed from the saddle-tree when the rider is unhorsed in different directions.

13,081. Craddock, G. Oct. 2.

Bits.—Along the front of the side bars A of curb bits are formed several projections or ridges B with intervals between them. The reins are attached to rings C formed on pieces of metal having a keyhole slot, and which are free to slide up and down the side bars until turned round at one of the intervals between the ridges B. The leverage of the reins may thus be altered without unfastening them.



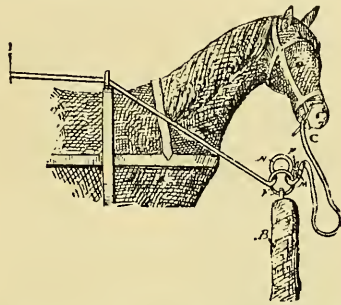
13,096. Brock, W. K. Oct. 2.

Electric harness; stopping runaway or kicking horses.—A current of electricity is passed along the spine of the animal, from the mouth to the tail, by means of conducting-wires forming part of the harness, the current being supplied from an accumulator or battery on or near the splash-board. A suitable make-and-break appliance is provided, so that when the horse kicks or becomes restive the wires are connected and the current gradually increases until the animal becomes quiet.

13,563. Allison, H. J., [Harrison, L. C.]. Oct. 14.

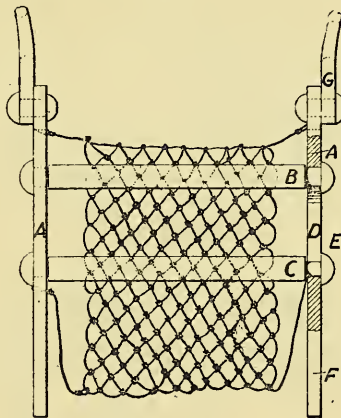
Tethering animals.—Relates to a device for hitching horses, consisting essentially of a ring F and hook M made to fit it with moderate ease, both being attached to the driving-rein or a special

strap. By passing a loop of the rein N through the ring E of the post B, and slipping the ring F over the hook M, it will be seen that the horse



pulling on the side C cannot release the fastening, whereas the driver may take his seat and by a simple pull of the rein at once do so.

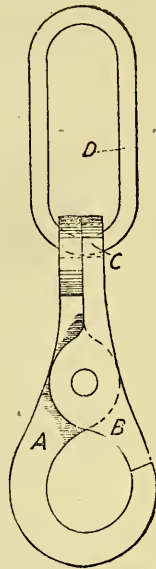
13,597. Thornton, A., Baron de Mouncie. Oct. 14.



Bits; bridles.—The cheeks A of the bit are connected by the two mouth-bars B and C, the upper being free to rotate only, while the lower may rotate and also slide in the slot D. Each cheek has two slots E and F to carry the reins, E running parallel to the slot D, and F formed at the lower extremity as usual. At the upper extremity is a pivoted piece G to which the cheek strap is attached, or a fourth slot may be employed instead. A piece of wire or other netting, attached as shown, serves to restrain the animal by a backward motion towards the throat when the reins are pulled and the bar C slides in the slot D; it also serves to promote the flow of saliva. To prevent injury to the mouth by sudden pulls upon the bit, two side straps pass from the nose-band or a prolongation thereof and are attached to the bit or the extremities of the reins. To complete the control over the animal these straps may carry a piece passing across the nostrils.

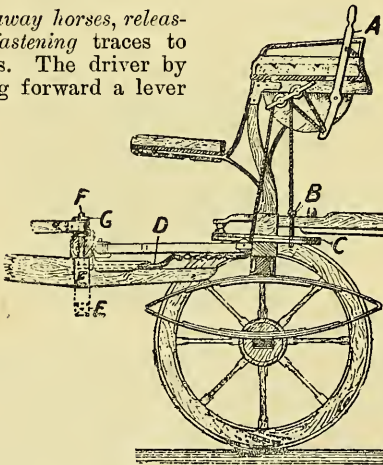
13,662. McKenny, J. Oct. 16.

Fastening pole-chains, hooks for. The hook is in two parts A, B, hinged together and bored at the end C for receiving the elongated link D. In the position shown the hook is closed, and to open it the link D must be slipped round until at right-angles to the hook, the arms of which may then be separated.



14,350. Corbould, W. Oct. 30.

Runaway horses, releasing; fastening traces to vehicles. The driver by pressing forward a lever

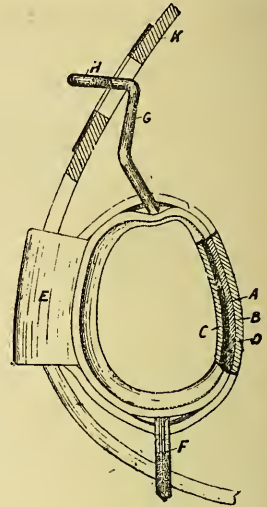


handle A withdraws a bolt B which releases a spring that locks the fore-carriage C, and at the same time a spring bolt D is pulled back and allows a bar E to fall. This bar has attached to it vertical pins F passing centrally through the roller bolts G, which are thus released when the bar E falls. The collar chains are attached to a hook having a shank which fits loosely into the end of the pole and slips out after the traces are released.

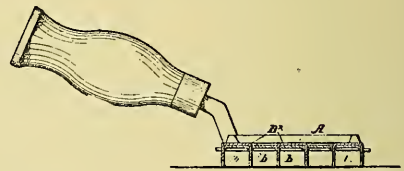
14,632. Hill, T. W. Nov. 5.

Tugs, shaft.—The body of the tug is formed of a metal band A, to which the leather

band B is glued, both sides being further lined with leather at C and D. To this the tubular part E, the loop F, and the fastening G are fixed. This fastening consists of a stout piece of metal having a horizontal loop at the end H which takes into a slot in the body strap K. The tug is thus attached to the body strap by means of the fastening G and loops E and F.



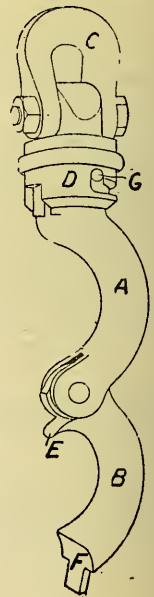
14,857. Cox, A. W. Nov. 11.



Currycombs.—To the back of the comb A are fixed the ordinary serrated metal strips B², and between each of these are fitted other pieces b, shaped as shown. The latter are fixed upon a square wire frame hinged at one side, and serve the purpose of removing the dirt, hair, &c. which collect between the teeth of the comb during its use.

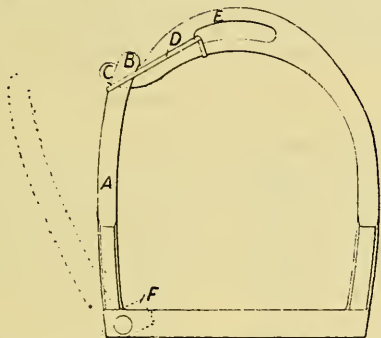
14,955. Jones, R. C., and Cunningham, J. W. Nov. 13.

Fastening harness. Relates to a slip-hook fastening by means of which fallen horses can be readily detached, and which consists of two parts A and B hinged together at one end. The other end of the part A carries the shackle C and the circular collar D. The part B has a projection E which fits against the curve of the part A and at the other end has a lug F by which it is locked. The locking-collar D has an opening, by which the lug F is inserted beneath it, and a slot with a recess at each end for determining its



rotation. A spring is concealed in the collar to ensure the position of the slot with regard to the pin G, which is fixed to the part A.

15,054. Fletcher, J. M. Nov. 15.



Stirrups.—The Figure shows one form in which the side A is hinged at the bottom to the tread and formed at the top with a loop B through which the projection C passes. D is a thin cord or rubber band to prevent any jingling noise, which may also be prevented by a spring fixed to the part E and bearing upon the top of the loop B. The hinge has spring sides formed like those in a well-known form of pocket corkscrew, or may have a separate spring bearing on the projection F, or this may be prolonged to come beneath the foot of the rider. Either one or both sides may be hinged, and the hinge may be at the top or bottom end.

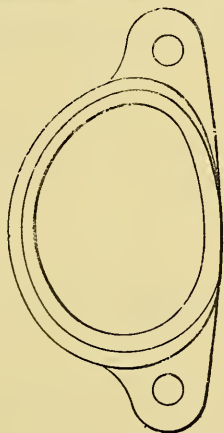
15,122. Evans, G. Nov. 18.



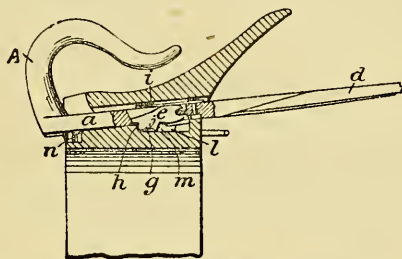
Whips.—The handle consists of a metal tube, covered with cork and having a plug at one end and a collar at the other end of bone or other material.

15,869. Burgess, J. Dec. 3.

Tugs, shaft.—The tug is made of metal and furnished at the top and bottom with a loop or eye to which the back-chain or back-band and the belly-band are attached by means of a hook, buckle, ring, or other connection.

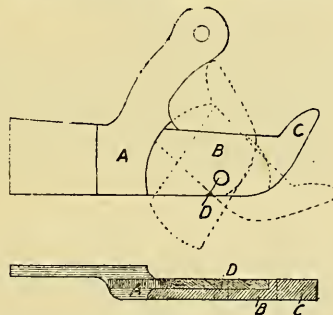


15,996. Clark, A. M., [Darling, J.]. Dec. 5.



Bridles; fastening adjustable bearing-reins. The bearing-rein is attached to the hook A, which may either be pulled up close to the saddle by the strap *d* passing to the driver's seat or be allowed to remain at such a distance therefrom as affords perfect freedom to the horse. The driver can thus effect these changes without leaving his seat. The saddle-tree is recessed to receive the flat part *a* of the hook, which is itself slotted to receive the pivoted "dog" *e*. This "dog" has two teeth *g* and *j*, which abut against the shoulder *h* on the saddle-tree and the incline *m* on the sliding piece *l* respectively. The Figure shows the position when the bearing-rein is drawn up; to release it the strap *d* must be first pulled back. This compresses the spring *n* and draws the tooth *j* up the incline *m* until it rests upon the top of the sliding piece *l*, in which position it is held more securely by the spring *i*. On now releasing the strap *d*, the "dog" slides back with the piece *l*, and its front tooth clears the shoulder *h*; the part *a*, together with a certain length of the strap *d*, then passes through the saddle-tree, the spring *i* at the same time preventing any tendency of the rein to leave the hook. On wishing to again check the horse, the strap is drawn back until the tooth *j* is forced by the spring *i* against the incline *m*, so as to move the piece *l* back and assume the position shown.

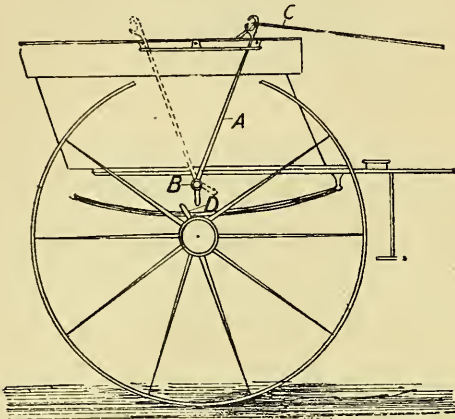
16,045. St. Aubin, W. H. Dec. 6.



Stirrup straps, suspending, safety saddle-bars for. The bar upon which the loop of the stirrup strap hangs is in two parts A and B, B being free to move on the pivot D and having a projection C as shown. When the horse rears the stirrup loop presses on this end of the bar, which yields to the

pressure and frees the strap. Again, when the rider is thrown upwards and forwards, the strap presses beneath the end C and is released upwards in a similar manner.

16,279. Cleary, M. Dec. 11.

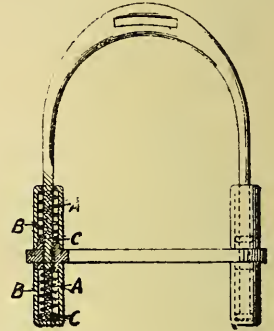


Rein-holders consist of a lever pivoted to the body of the vehicle and adapted to engage with a

crank or projection on the wheel nave when the vehicle is at rest in the absence of the driver, so that, should the horse start off, the crank will actuate the lever to pull up the animal. The Figure shows the application to a dogcart. A is the lever pivoted at B and holding the reins C. D is the crank or projection on the nave. When not in use, the lever is pushed back clear of the projection D, as shown by dotted lines.

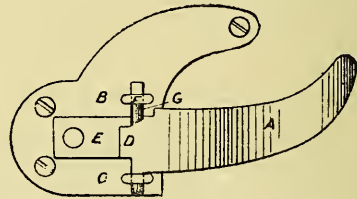
16,654. Temple, T. Dec. 19.

Stirrups. — Each leg of the stirrup carries either one or two spiral springs A, enclosed in cylinders B, and resting at their lower ends upon nuts C screwed to the leg. The tread is attached to these cylinders, and thus prevents the transmission of any unpleasant vibration to the foot.



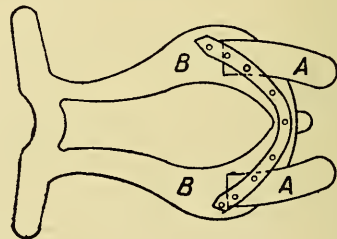
16,826. Woolley, W. Dec. 23.

Stirrup straps, suspending, safety saddle-bars for. The stirrup strap is attached to the part A, which is hinged at B and C and provided with a tongue D bearing against a spring E. The eye F of the hinge B is square, and the upper part of the rod G is square also. When the rider is thrown forwards, the part A is jerked up so that the lower and rounded part of the rod G passes through the eye F, and the part A consequently swings forwards on its hinges and liberates the stirrup. The stirrup strap is also free to leave the bar A in a backward direction.



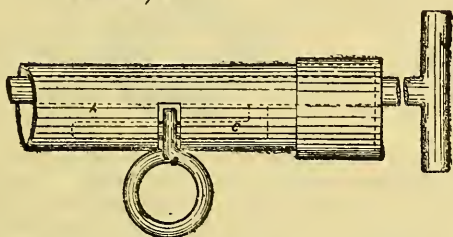
16,865. Perkin, A. Dec. 24.

Saddles, military. Two fan-tails A of steel or other elastic substance are fixed either upon the saddle-tree B or to the pannel so as to project as shown. They are covered with leather, and from their elasticity prevent injury to the horse's back, and will adapt themselves to fit a hollow-backed animal.



A.D. 1885.

78. Chawner, F. Jan. 2.

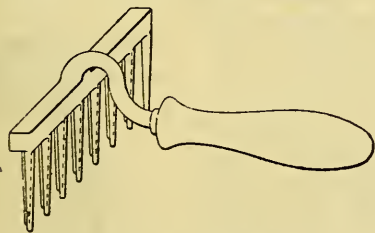


Fastening halters. Relates to means for releasing several halters simultaneously in cow-houses &c. in case of fire or flood. In stables, along the front of the manger, is a pipe A having openings for the reception of rings B on the halters of the animals. A bar runs through the pipe and has on it pieces C bent at right-angles which pass through the rings, so that by turning the bar round or drawing it out a short distance the rings are released. The handle for turning the bar is outside the building. In the application of this to cowhouses the arrangement as above is retained, but instead of setting free a ring on the halter the ring on the boozing stake is released. To effect this the latter ring is in two parts hinged together and a small chain attached to one half passes through a hole in the other, the animal being set free by releasing the end of this chain.

411. Norton, C. Jan. 12. *Drawings to Specification.*

Whips.—Consists in imitating enamelling in metal whip handles by inserting glass pieces of any desired shape in corresponding apertures formed in the metal, and securing the glass by cement and a corrugated metal backing or by burring down the metal. The glass may afterwards be ground flush with the rest of the surface and polished.

496. Hall, W. F. Jan. 13.

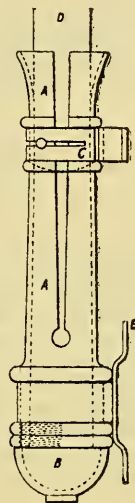


Combs for the manes and tails of animals. The teeth are arranged in two rows, those of one being

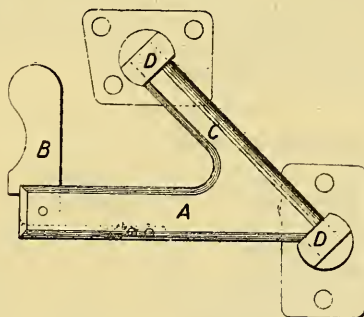
opposite to the spaces of the other. The teeth may be of triangular or oval section and may be parallel or bent outwards; a handle is attached as shown.

498. Cottrell, J. Jan. 14.

Whip sockets.—The socket may be made of wood, bone, &c., or of metal. If of wood or similar material, a tube A, shaped as shown, is taken and split longitudinally; a cap B is then screwed upon its lower end and a spring band C is fixed around the neck. If of metal, four strips are riveted to form a cross, and the ends are then bent up to the same shape as before. A spring band is fixed around the neck as in the wooden socket.



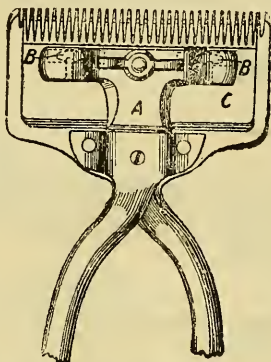
559. Rolleston, L. Jan. 15.



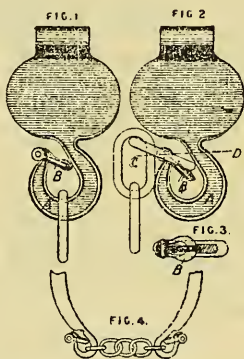
Stirrup straps, suspending, safety saddle-bars for. The bar is formed of the horizontal arm A, which carries the usual safety catch B and supports the stirrup strap, and the inclined arm C which is pivoted in the sockets D, D firmly fixed to the saddle-tree. If the rider be thrown backwards the safety catch B acts in the usual way, and if thrown upwards and forwards the arm A swings upwards upon the arm B into a vertical position and so releases the stirrup strap.

1107. Bown, W., and Capewell, G.
Jan. 26.

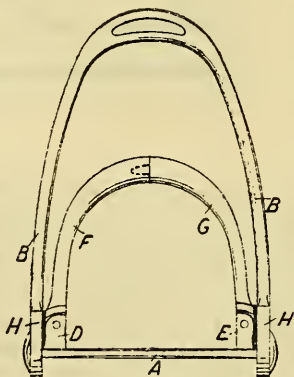
Horse clippers and the like.—The object is to reduce the friction between the sliding parts. The bar A is attached to the fixed arm, and small approximately - quadrantal pieces B, B placed between it and the sliding plate C. These pieces are rounded at both bearing surfaces so as to offer a rolling contact. A spring cap is provided, where necessary, to cover the bar A and prevent the entrance of dirt.

**1668. Marsh, T.** Feb. 6.

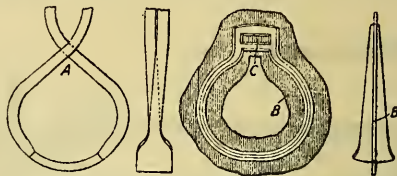
Fastening traces, hames, &c., hooks for. In Figs. 1, 2, and 3 the hook is used for draught purposes, and in Fig. 4 for connecting the ends of the hames. It may also be applied to the shafts of vehicles. To one limb of the hook A is hinged a spring link, tongue, or shackle B, shown in Fig. 3, which is a section across Fig. 2 on the line C D. The chain is introduced, as shown in Fig. 2, and when within the hook the spring closes the hook, as shown in Fig. 1. In cases where the hook is employed in positions in which the link tends naturally to close the hook by reason of its weight, the spring may be dispensed with.

**1765. Scott, J.** Feb. 9.

Stirrups.—To form a safety stirrup, the tread A is pivoted to the legs of the bow B, which has the usual loop for the strap. To the tread are fixed the projections D, E, to which the inner legs F, G are hinged. Stops H, against which the projections abut, limit the pivoting motion of the tread. When the rider is thrown the pressure of the



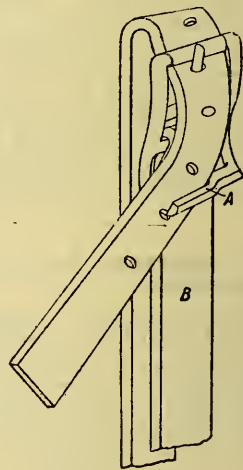
foot on the tread causes it to turn round on the outer bow, thus enabling the legs of the inner bow to separate and release the foot.

2028. Duffield, S., and James, J. H.
Feb. 13.

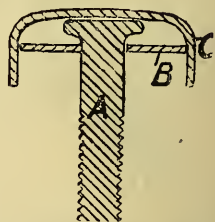
Stirrups.—The stirrup is made from one bar of iron or steel instead of two as now usual. The bar is bent so that it crosses at the part where the loop will be, as shown at A, or at the part where the tread will be. The bar is then stamped to the stirrup shape, the fin B is removed, and the loop C is pierced. When the bar is crossed at the tread this part is stamped so that the tread is parallel to the sides; it has therefore to be subsequently bent at right-angles.

2341. Hetherington, T. Feb. 20.

Stirrup straps.—The clip A is intended to hold the strap obliquely, as shown, so as to be out of the way of the rider's knee. It is shown as a projecting piece forming part of the buckle. In another form it consists of a slotted piece of metal which is fixed on the end B of the strap by a screw or spring, and has a projecting piece as before.

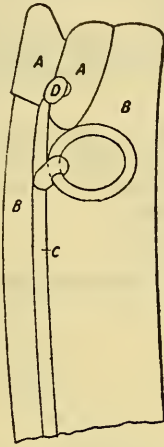
**2429. Crosbee, S.** Feb. 23.

Saddles.—Relates to cab saddle screws. The screw A has the upper part square to fit into the square hole in the disc B. The sheet-metal cap C is placed over the screw-head disc, and these parts are pressed together to form the finished head of the screw.



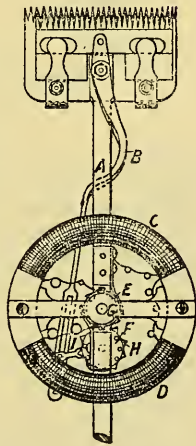
2551. Lory, H. C. Feb. 25.

Collars ; fastening hames. A metal cap or plate A is shaped to fit tightly upon the top of the collar B, either upon the after wale only or upon both front and after wales as shown. This cap or plate is furnished with some means for connecting it with the top ends of the hames C, as, for example, a loop and button D as shown. The hames are connected at their lower ends by a strap in the usual way.



2896. Salazar, C. de. March 5.

Horse clippers and the like.—The plates are actuated in the ordinary way by the levers A, B, to one of which A are attached the electro-magnets C, D arranged in a circle. Opposite them rotates a similar pair of magnets which act as an armature. On the axis of the armature is the disc E with a pair of teeth which engage pins on the wheel F. A second circular disc G is concentric with the disc E, and has two indentations, forming, with the projections H on the wheel F, a species of Geneva stop, and prevents the wheel F from rotating except while it is being driven by one of the teeth on the disc E. An arm I projects from the wheel F, the end sliding in a slot in the lever B, and imparting to it an oscillating motion. The movable cutter-plate may be actuated, through toggles, by a crank and connecting-rod, or a rod operated by a cam. The axis of the motor may be parallel with the cutter-plates and may carry a worm gearing into the wheel F

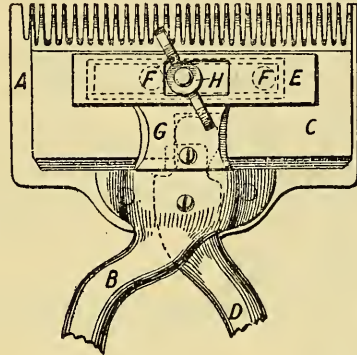


2979. Louvot, E. P. March 6.

Traces ; materials for making.—A composition is made by filling with tar the pores of dry absorbent bodies such as cardboard, paper, rope, canvas, &c. On placing tar products in contact with the bodies and creating a vacuum the tar settles in the pores of the bodies. The material is then subjected to pressure, and the volatile and liquid portions of

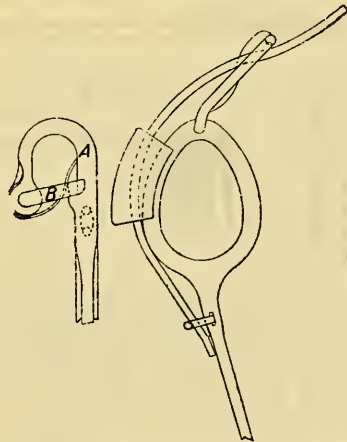
the tar are afterwards expelled by graduated heat. The product is stated to be impermeable, unflammable, and acid-proof, and capable of application in making traces.

3207. Bown, W., and Capewell, G. March 11.



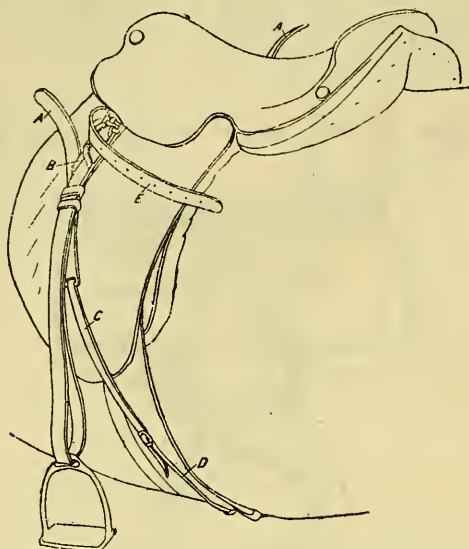
Horse clippers and the like.—The fixed plate A is attached to the lever B, the cutting-plate C being actuated by the lever D. The hollow bar E is attached to the cutting-plate, its bottom being formed with angle or curved surfaces in which anti-friction balls F are placed. The arm G is fixed to the stationary lever, passes through one side of the bar E, and carries on its extremity a guide parallel and similarly formed to the bar, the balls rolling between the guide and the bottom of the bar. The plates can be drawn together by the thumb-screw H.

3337. Powell, W. March 14.



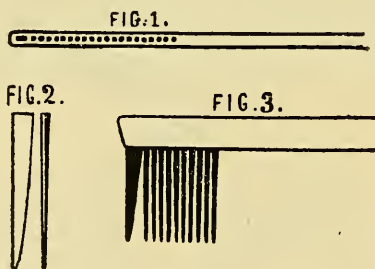
Bits ; bridles ; tugs, shaft.—The bit is attached to the bridle by the hook A, which is furnished with a drop link B pierced to receive a spring urging it downwards as shown. The material of the shaft-tug is continued at the bottom to form a strap, or has a strap buckled to it by which it is fastened to the girth.

3586. **Roskell, N. R.** March 20.



Saddles.—Relates to an attachment for riding-saddles intended to bear against the rider's thighs, and so enable him to keep his seat. It consists of two curved metal pieces A, attached at the top by the strap B passing to the buckle for the stirrup leather, and at the bottom by the strap C which is buckled to a small additional girth D. E is a strap turned on one side to show the top attachment.

3695. **Binns, G. A.** March 23.

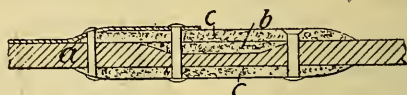


Combs for combing the hair of animals are made with backs of drawn brass, steel, or other metal, bored for receiving round or flat teeth of tempered steel. Fig. 1 is a section of the back of the comb; Fig. 2 shows the teeth, and Fig. 3 is an elevation of part of the comb.

3727. **Wheeler, J.** March 23.

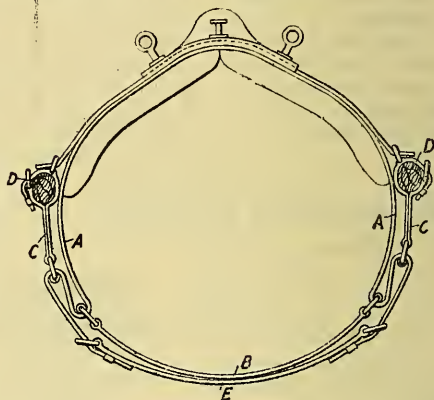
Saddles.—The side bars *a* of saddles, especially side saddles, are made flexible by considerably

reducing them in thickness, or dividing them, at or about the middle, and strengthening or connecting



the parts with leather *b*, *c*, or other suitable material. Saddles so constructed adapt themselves to the shape of the animal's back, and also prevent galling.

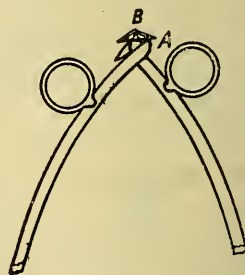
4144. **Studdy, H.** April 1.



Saddle - girths; bellybands; fastening.—The girthing attachment for harness saddles consists in passing the straps A first through loops on the ends of the strap B, which takes the place of the usual girth, then through loops on the ends of the straps C, which are secured above to the shaft-tugs D, and lastly buckling them to the strap E which takes the place of the usual bellyband. This girthing attachment is especially for use with two-wheeled vehicles, such as hansom cabs, where there is a tendency, when ascending a hill, for the shafts to rise up and so increase the necessary effort of the animal. Again, in case of a fall, the animal may be easily released by unbuckling one of the straps A from the strap E.

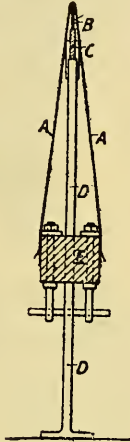
4732. **Lory, C. H.** April 17.

Fastening hames. The hames are connected at the top by two hooks or by a hook A and stud B as shown, instead of by the usual straps and buckle.



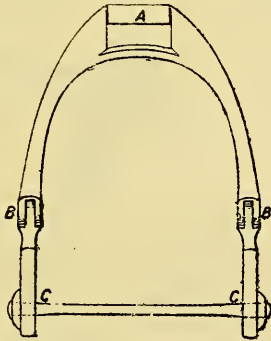
4791. Mitchell, R. J. C. April 18.

Clothing for animals.—The object is to produce a seamless covering for horses, fat cattle, &c.; the apparatus employed is shown in the Figure, which is a vertical section through the centre. A piece of felt cloth A is taken, and whilst in the wet state is hung over the suitably-shaped pieces of metal B, which are fixed to an iron bar C supported by the up-rights D, and is then attached to the movable wooden bar E by tenter hooks which pass through the cloth close to the selvages. This wooden bar is slotted at its ends to slide up and down the up-rights D, and during the stretching of the cloth is forced downwards by suitable levers until the cloth has taken the required form. A current of hot air is then passed between the sides of the cloth to dry it.



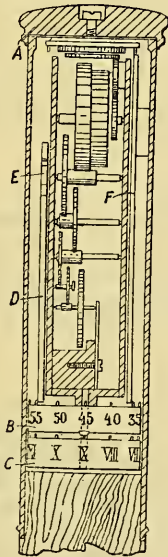
4945. Wright, R. April 21.

Stirrups.—The strap is attached by means of the roller A. Each of the arms is in two parts jointed together at B, and the tread is pivoted to the lower parts of the arms as shown at C.



5024. Lake, W. R., [Holuska, L.]. April 23.

Whips combined with watches. The movement of the watch is mounted in a cylinder to fit into the whip handle. The spring is wound by turning the head A, which through a ratchet-wheel and pawls and crown-wheel turns a wheel on the barrel arbor. The jewels bearing the pivots of the balance arbor are carried by spring arms to lessen the shock. The time is shown by the figures on the cylinders B, C appearing at openings in the stick. The cylinder B is turned every five minutes by the lever D, which is vibrated every five minutes by the star-wheel E. The discs are set by turning the head A



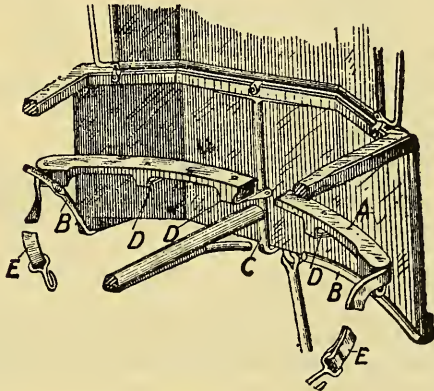
the wrong way to act on the lever F which is brought into action by a sliding stop. The time may be shown by a miniature dial instead of the cylinders B, C.

5058. Haddan, H. J., [Jesch, E.]. April 23.



Spurs.—Relates to a hollow spur C which can be inserted in a hole in the heel of a specially-constructed boot B, and serves to ventilate the boot. The hollow spur may be replaced by a solid one in damp weather.

5833. Haddan, H. J., [Wainwright, J. W.]. May 12.

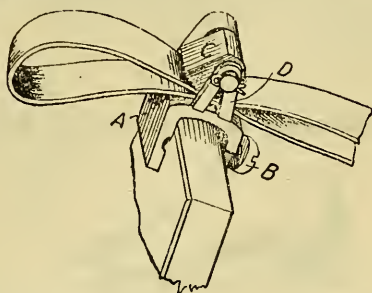


Traces.—The object is to equalize the strain on each side of the draught animal, which is attained by securing suitable bearings to the front of the cab to take a continuous trace the ends of which are attached to the harness of the animal. The Figure shows, in perspective, the front of a hansom cab. A is a curved bar fitting the concave front of the cab, and supported at its ends by the usual stays B, its centre being secured to the vertical rod C. It is provided with small pulleys in recesses D round the back of which passes a continuous trace E having hooks at its ends for attachment to the harness as usual.

5967. Larkin, R. May 15.

Collars, neck. An elongated pad about a foot long and tapering at the ends is fitted on the inner side of the forewale of horse-collars.

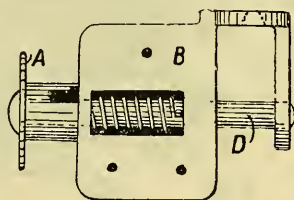
6175. **Harcourt, G. J., and Shaw, E.**
May 20.



Rein-holders.—To a frame A, which may be secured to the vehicle or riding-saddle by a screw B or otherwise, is hinged the cam C. The reins are gripped between this cam and the frame. A piece D is hung freely from the pivot of the cam and prevents the rein from accidentally coming out. It will be seen that any pull of the horse on the reins only tightens them beneath the cam, but that they may be easily freed by a pull in the opposite direction.

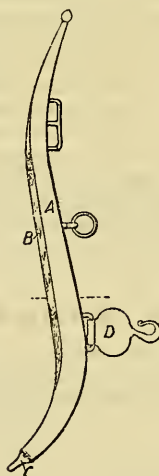
6301. **Diss, A.** May 22.

Fastening traces, draw-bolts for. The trace fits on a bolt which slides against the force of a spring in a bracket on the shaft. The Figure shows a plan of the arrangement. The casting B is secured to the shaft by three screws. When the knob or collar A attached to the bolt is drawn out by hand, the spring is compressed, and the trace which fits on the part D is released.

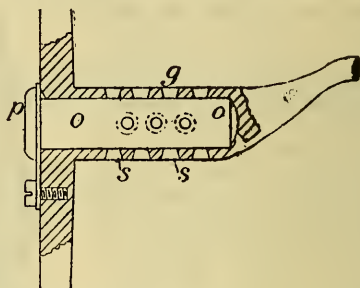


6310. **Marsh, T. P.** May 22.

Collars.—Cart hames are covered with moderately-thick sheet brass A, the usual sheet iron supporting it being dispensed with. This is fixed to the wood frame B by closing it round and then firmly pressing it. The bottom loop C for the usual chain fastening is formed by bending a long strip of iron and nailing the long arms thus formed to the wood frame B. One or both arms extend beyond the draught hook D so as to strengthen the hame at this point.

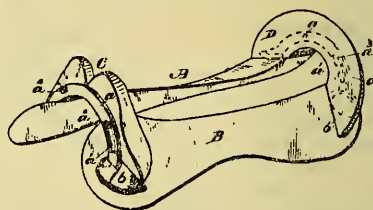


7087. **Hubner, C.** June 10.



Bits.—The bar *g* of the bit is bored to form the chamber *o*, the walls of which are perforated at *s, s*, the end being closed by a slide *p*. Refreshments are introduced into this chamber and pass through the holes to the horse's mouth, thus rendering removal of the bit to effect this unnecessary.

7351. **Wint, T. J.** June 16.



Saddles; pack saddles.—Relates to the mode of connecting the side-bars A, B and is applicable to both riding and pack saddles. A circular strip *a* is fixed by feet *b* to each end of the side-bars so that these strips overlap at each end and have their centre at a point about midway between the top edges of the side-bars. These strips, situated in pairs close to the pommel C and cantle D, are adjustably fastened together by nuts *a'* upon bolts which take in the slots *a'*. By this arrangement, which may be slightly modified, the side-bars A, B may be inclined so as to fit the backs of different animals with but little alteration in the pommel and cantle.

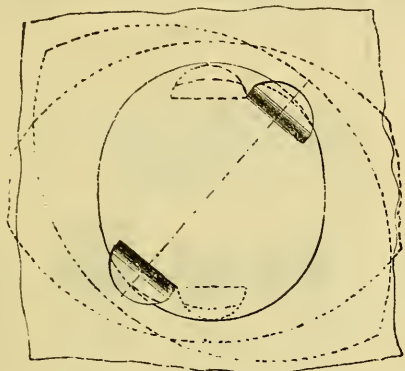
7505. **Thomas, W. F.** June 19.

Materials for making.—Straps for harness are strengthened by longitudinal wires or metal bands combined with coir yarn to form the warp; the weft is simply coir yarn.

7514. **Bolton, G. H.** June 20.

Whip-sockets.—Whips are secured in the sockets by means substantially similar to those shown in the Figure as applied for fastening the head of a cask or drum such as is used for paint &c. The head of the drum has an oval or irregular opening. An oval flange, or a pair of projections as shown, on

the lid are inserted while in the direction of the longer diameter of the opening, and then the lid is turned so that they pass under the head of the

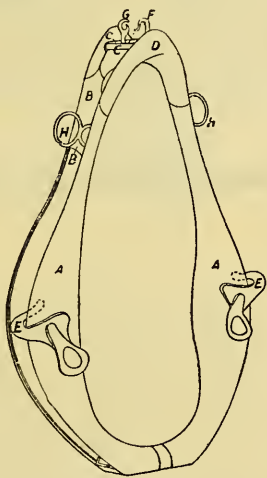


drum and secure the lid. The Specification describes the application of the fastening to a variety of articles.

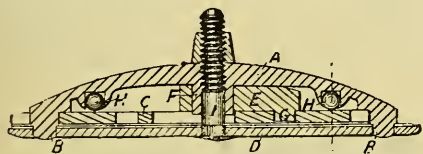
7633. Clark, A. M., [*Fisher, E., and McBride, T.*]. June 23.

Collars, neck.

The collar is composed of two like parts A constructed of steel plate, of U-section, hinged at the top to an adjustable piece B which connects the side pieces A with the coupling or saddle C secured to the neck pad D. Trace hooks E, having their points turned inward behind the flanges, are bolted on the front of the latter, which may be strengthened by springs. The check rein hook F and the back strap hook G are formed in one piece and are fixed to the saddle C. The rings H are prevented from rattling by springs.



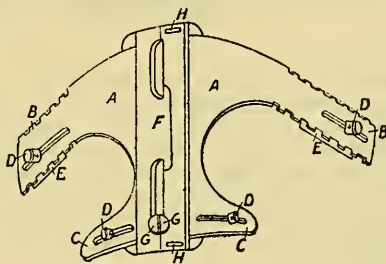
8204. Phipps, T. L., and Burman, W. July 7.



Horse clippers and the like.—The cover A is attached to the fixed handle and has two pins B, B

which pass through slots in the moving plate C and into holes in the fixed plate D. The moving handle E is pivoted on the bush F attached to the cover A, and actuates the plate C by means of the pin G which moves in an oblique slot in the plate. The friction between the cover and the plate C is relieved by the long antifriction rollers H, H, which are held in recesses in the cover in such a way as to prevent them from becoming detached when the apparatus is taken to pieces. The parts are held together by the bolt I, which passes through the fixed plate and the cover, and through a slot in the moving plate. The latter plate has a comb back and front and two oblique slots, enabling it to be reversed when one comb becomes unfit for use.

8388. Fisher, H. S., [*Fisher, N. A.*]. July 11.

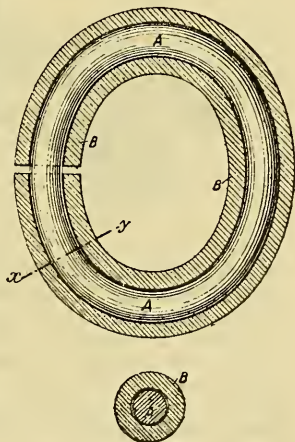


Fastening collars, clasps for. To the top of the adjustable collar are secured the adjustable plates A by means of the slotted arms B, C and screws D. The arms B engage with the notched plates E which, like the arms C, are secured to plates fixed beneath the leather of the collar. The plates A are connected by a lug F fitting between shoulders as shown, guide-stops G facilitating adjustment. Slots H, H are for straps for attaching a pad to the clasp.

8515. Hutchinson, W. D. July 14.

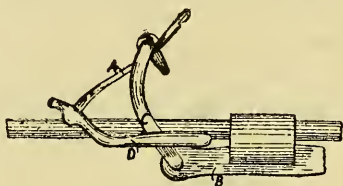
Interfering rings.

—The object is to obviate the difficulty in stretching the usual rubber ring over the horse's hoof. The Figure shows a horizontal section through the ring and a transverse section on the line *x y*. The complete ring consists of a solid ring A within a divided tubular ring B. It is made by first winding a sheet of india-rubber around a rubber



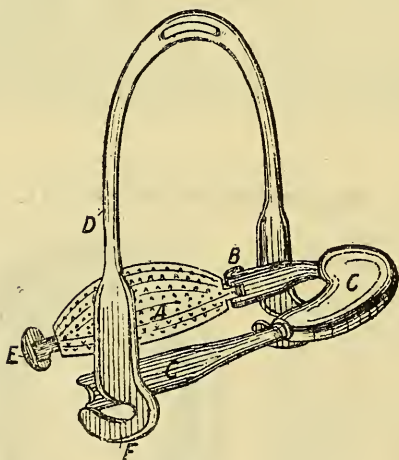
cord (adhesion being prevented by interposing paper, French-chalk, &c.); next cutting to the right length and sticking the ends of the inner core together; then shaping the ring (as shown) to fit the horse's ankle and vulcanizing; and, lastly, cutting across the outer tubular ring in one or more places. When the ring is cut across in several places the two rings may be fastened together.

8611. **Boult, A. J.**, [Kraft, E.]. July 16.



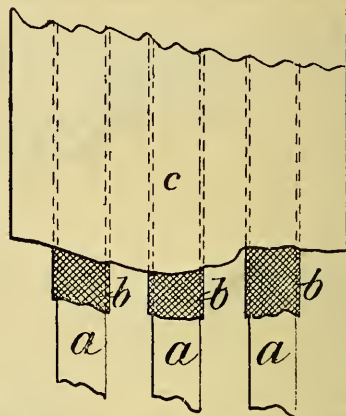
Fastening traces, buckle attachments for. The object is to clamp the trace in front of the tongue of the buckle to prevent the tongue from tearing the leather, and to permit adjustment without removing the trace from the buckle or hame-tug loops. The tongue plate A is pivoted at one end to the frame D, through which the trace passes, and is also pivoted to a link C connected to the hame tug B.

8940. **Allen, E.**, and **Cope, B.** July 24.



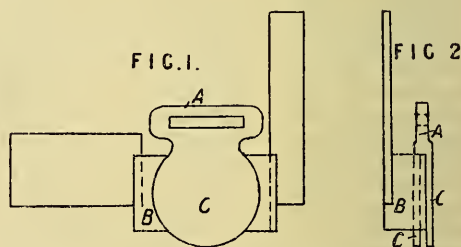
Stirrups, safety. The tread A is hinged at one end B to one leg of the inner bow C pivoted to the bow proper D, and is supported at the other end, which is formed with a pin E, in the open slot F. There may be a pin similarly supported at the other end of the tread. When the rider is thrown the foot presses upon the inner bow C, causing it to turn into the position shown, and so allow the tread to fall away and release the foot.

9523. **Barrett, H.**, and **Varley, J. J.** Aug. 10.



Traces; bridles.—The method of forming belts, described below, is stated to be applicable for forming traces and reins. The belt or strap is made by covering a flat strip or strips a, a, a of steel, ebonite, or other suitable material with india-rubber c, and vulcanizing. The strips may be coated with some fibrous material b, b, b, and the bands made in lengths joined by india-rubber or other spring connections. The ends may be connected by riveting, lacing, &c.

9873. **Cottrell, J.** Aug. 20.

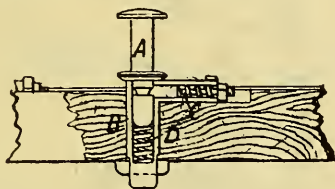


Stirrup straps, suspending.—Relates to a safety saddle-bar. The stirrup strap is attached to a loop upon a piece A formed with two parallel circular wings C supported by the front of a case or frame B which passes between them. The sides of this frame are curved to bear against the inner circular wing, and the frame is riveted to the tree for a gentleman's saddle, or fastened by a buckle for a lady's saddle. When the rider is thrown backwards the piece A rotates sufficiently to become free from the frame; when thrown forwards the piece A comes freely away in an upward direction.

10,192. **Wilson, T.** Aug. 28.

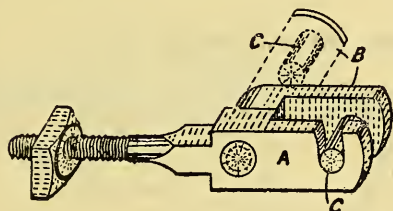
Runaway horses, releasing; fastening traces, drawbolts for. Relates to means for automatically

detaching horses from fire-engines or other vehicles. The roller bolts by which the traces are connected to the vehicle are made removable, and are detached from the splinter bar by springs



whenever the spring catches by which they are held are released by the movement of a lever. The Figure shows one of the roller bolts A fitting loosely in a socket B let into the splinter bar. A spring catch C fits into a groove in the roller bolt and holds the latter against the pressure of a spring D in the socket. All the spring catches are withdrawn simultaneously by a lever actuated by the driver's foot, thus setting free the bolts which are shot out by the springs D.

10,247. **Sampson, G. D.** Aug. 29.

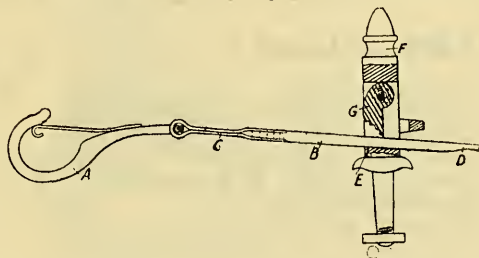


Fastening traces. The fastener, fixed by screws or otherwise to the part to be drawn or held, *e.g.* the shaft, splinter bar, or single-tree of a vehicle, consists of the fixed part A to which is pivoted the piece B. This is provided with a pin C which is passed into a loop in the end of the trace, and then introduced into the slot in the part A. The arrangements admit of easy disconnection in the event of the horse falling or for any other reason.

10,345. **Taber, W. D.** Sept. 1.

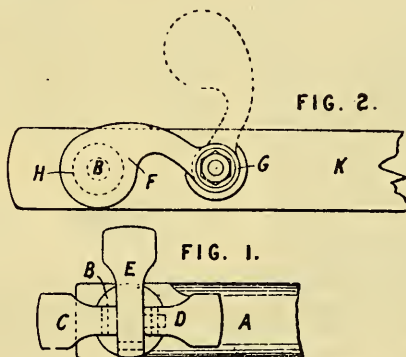
Rein-holders.—Relates to a device for holding bearing reins. The bearing rein is attached by the hook A to the strap B, which has a thinner part at C and D and may extend backwards, if desired, to the driver's seat. This strap passes between the inclined surface E of the frame F and a cam-shaped tongue G pivoted to this frame, which is fixed to the harness saddle. To tighten the bearing rein the strap B is pulled backwards and then released, when the cam again grips the strap. To relax the rein the strap is pulled backwards till the part C is beneath the cam. This then swings forwards against a stop by reason of a spring allowing the strap B to be pulled forwards. To

remove any difficulty in pulling the strap forwards, a recess may be placed in the side of the



frame a little to the side of the lower edge of the tongue.

10,407. **Blew, A. J.,** [Lublinski, D.]. Sept. 2.



Fastening traces to carriages. The object is to enable the traces to be readily secured to or disengaged from the roller bolts or studs by which they are usually connected to the vehicle. Fig. 1 shows in plan the invention as applied to double harness. A is a portion of the splinter-bar carrying the roller bolt B on the top of which are hinged three plates C, D, E, so that E lies close against the inner edges of C and D. By raising first E and then C and D to a vertical position, the trace can be slipped over them and on to the roller bolt; and by then turning the plates down again, the trace is secured. Fig. 2 shows a modification in which a single plate F is used; it is hinged on a stud G and can turn horizontally to cover the top of the roller bolt or stud H for securing the traces. The plate F may carry a larger plate to form an ordinary carriage step. This method of securing the traces is also applicable for single harness, in which case K would represent a portion of the "futchel" bar.

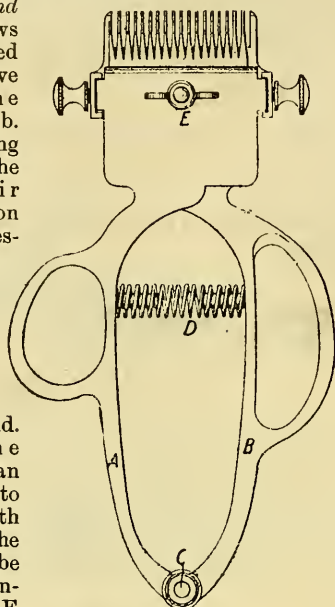
10,608. **Armes, W.** Sept. 8. *Drawings to Specification.*

Lining and padding.—The saddle, collar, knee-caps, and other parts of the harness are lined with

india-rubber or other suitable cloth inflated with air.

11,399. Trickett, J. Sept. 24.

Horse clippers and the like.—The bows A, B are pivoted at C, and have spaces for the fingers and thumb. The spiral spring D restores the combs to their normal position on removing the pres-



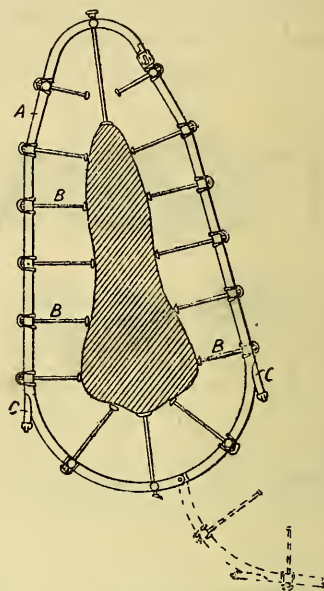
sure of the hand. Underneath the lower comb is an adjustable comb, to regulate the length of the hair, or the lower comb may be detached by unscrewing the nut E and one of different thickness substituted. In an alternative arrangement the combs are on arms, pivoted together as before; but the movable comb is actuated by an eccentric working in a slot and driven by spur or bevel gearing. In this form the instrument is held in one hand while the other works a handle, which drives the bevel gearing.

11,470. Spence, R. J. P., and Storrar, R. Sept. 26.

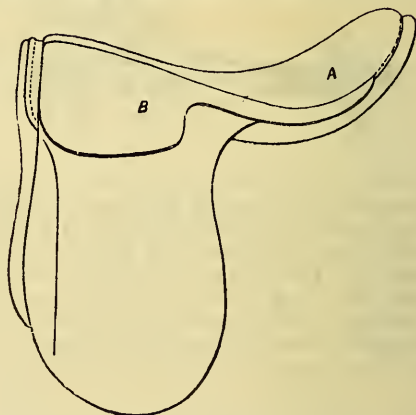
Measuring for collars.—The instrument consists of a frame A through which passes a number of rods B which, when the instrument is in position, at their inner ends touch the animal's neck. These rods, which (except those at top and bottom) are urged inwards by elastic bands as shown, are preferably clamped when in position, the instrument being removed by opening out one side as shown by the dotted lines. If graduated, however, they need not be clamped, and the instrument may be taken off over the head. The clamps may be of any form, but several at each side are preferably clamped simultaneously by a rod passing through the tube C. The shaded Figure shows the form of opening which the collar is required to have.

(For Drawing see next column.)

11,470.



11,591. Mowat, O. G. Sept. 29.

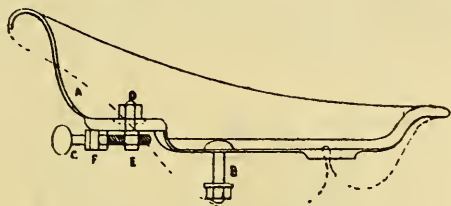


Saddles.—The seam up the middle of the seat in the usual form of pilch saddle is covered by an additional piece of leather or seating A sewn to it. To this are sewn the skirts B, which cover the saddle-bars, now no longer placed in "pockets." By these modifications the pilch saddle has the appearance of an ordinary riding saddle.

11,642. Lennard, S. Sept. 30.

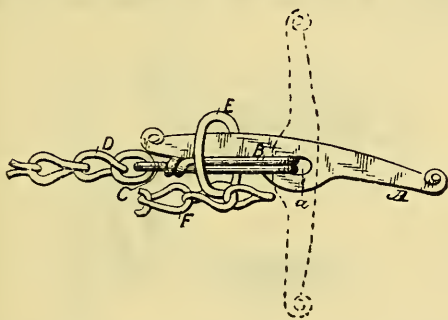
Spur-carriers.—The elastic sides of a special form of boot are protected by leather flaps attached to the front and fastened at the back of the boot. In military boots, these flaps may be connected by a strap carrying the spur.

11,858. Bagshaw, F. W. Oct. 6.



Saddles.—Relates to an adjustable tension saddle for velocipedes and horses. The frame of the saddle is formed of two metal plates A and B sliding one upon the other and connected by a stud E and nut D. The stud passes through a hole in the upper plate and a slot in the lower plate. A screw C mounted in the lug F fixed to the plate B works in the lower part of the stud E and serves to adjust the tension of the leather by moving the plate A backwards or forwards as required.

11,897. Cox, A. W. Oct. 6.

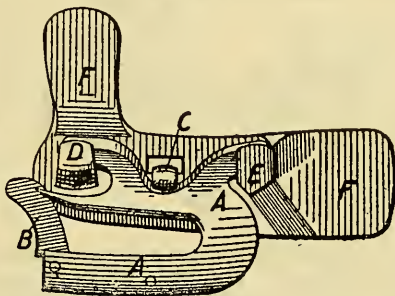


Fastening halter and harness chains or straps. A spring link is formed from a single piece of wire bent into a loop at the end C for the end of one chain D and into a pair of loops at the end B. The pair of loops pass through the oblong slot *a* in the cross-bar A and have a tendency to separate, an action which takes place when the cross-bar is in the position shown in dotted lines. E is a loop which is fastened to the other chain F or to a strap, and against which the cross-bar is drawn when the connection is made.

11,972. Jackson, C. Oct. 8.

Horse boots are made from a hardened mixture of asbestos and a resinous binding-material, such as shellac, described in Specification No. 11,976, A.D. 1885. The loose asbestos fibre is mixed with a concentrated alcoholic solution of shellac, and partially dried in a current of air. It is then shaped as required by pressure in a mould; spirals of soft steel wire may be embedded in it. The article is then dried completely, and, if required to be hard, is repeatedly saturated with shellac solution and dried. It is finally heated to 300° or 400° F. and submitted to heavy pressure.

12,311. Nicholls, F. V. Oct. 15.

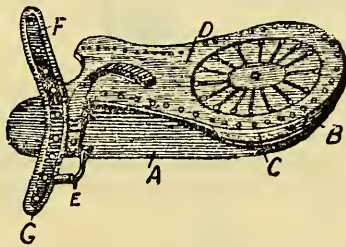


Stirrup straps, suspending.—In saddle-bars the stirrup strap is hung from the part A, which is provided at its rear end with the usual safety catch B. A spring stud C bearing against the concave top of the part A presses it down upon the two hooks D, E fixed to the plate F, which is firmly attached to the tree. The hook E may be replaced by a staple, and the projection which fits into it by a ring to prevent loss of the piece A when the rider is unhorsed, over the back of the animal. For ladies' use the part A is a closed link, the safety catch B being unnecessary, and the hook E is placed at a higher level than D.

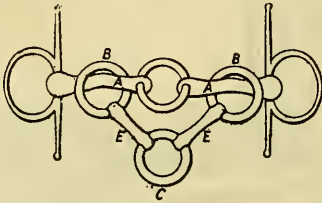
12,456. Dolman, G. W. Oct. 19.

Spur-carriers.—Upon the heel of a cavalry or field boot is a metal strip extending vertically between the stiffener and counter to carry the spur, and to serve as a support for the heel stiffeners.

12,618. Lake, H. H., [Leckel, H.]. Oct. 21.



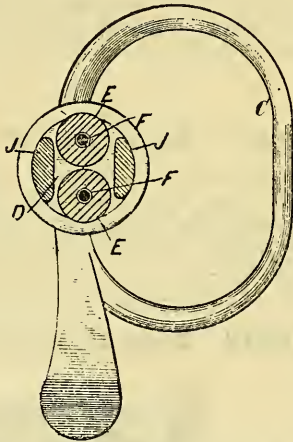
Saddles.—The saddle-tree for either ladies' or gentlemen's saddles consists of two side boards A joined at the back to the cantle B by a curved iron rail and in front by an arched iron strip. Over and between these side boards is stretched, and held by a curved piece C, the seat D "like a tight drum skin." The support E for the stirrup strap and the horns F, G for a lady's saddle are fixed to the side board as shown. The saddles formed from these trees are lighter than usual, for the thick padding may be dispensed with, and do not press upon the spine or withers of the animal.

12,713. Andrews, H. Oct. 23.

Bits.—Consists in the use with any ordinary bit of a novel form of “players.” These are made up of three rings B, B, and C, of which B, B slide upon the mouth bar A while the ring C is connected to the rings B, B by intermediate links or bars E, E. By the action of this device the angles of the animal's mouth can be made to relax and the control over it increased.

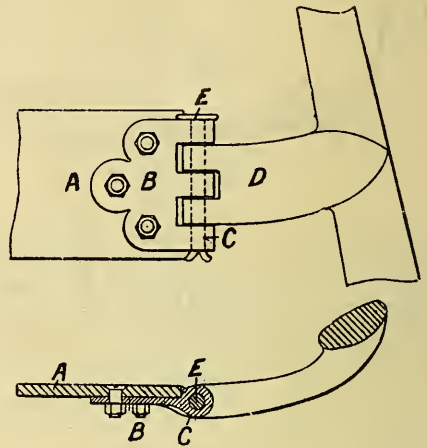
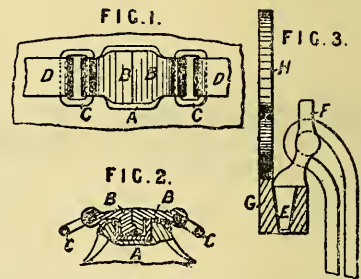
12,902. Lake, W. R., [Roberts, B. P.]. Oct. 27.

Bits.—The bar of the bit is made up of or carries one or more rollers to prevent it from being held between the teeth of the animal, the rollers being arranged so that no lateral pressure comes upon the mouth. The Figure shows a section taken a little to the front of the middle line. Two rods F connect the rings C of the bit, and upon these rods are mounted rollers E, E. In the middle is the piece D connected to the sides by bars J, J. In a modification, the bit is formed with a continuous rolling or rotating surface on each side, or only on one side; or, in place of rollers, balls may be employed, turning in sockets.

**13,005. Ogden, S., and Jackson, I.** Oct. 29.

Fastening traces. To each end of the trace A is attached by bolts or rivets &c. a metal plate B formed with teeth to grip the substance of the trace and with a loop C to receive the similar part D. The parts C and D are connected by a pin E, and the part D is either fixed directly or by means of a loop to the hame or other part of the harness or to the vehicle.

(For Drawing see next column.)

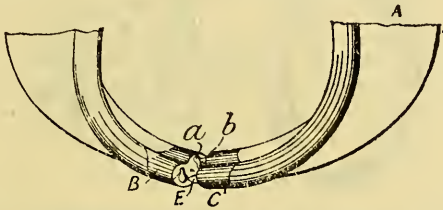
13,005.**13,162. Renton, G., and Davies, J. H.** Oct. 31.

Stirrup straps, suspending.—Relates to safety devices for attaching stirrup straps to saddles. Fig. 1 shows a plan and Fig. 2 a sectional elevation of the device for a gentleman's saddle; Fig. 3 is an end sectional elevation of the device as applied to a lady's saddle. To the pommel of a gentleman's saddle is fixed a box A into which are fitted two blocks B which are interlocked as shown and carry loops C to which the stirrup straps D are attached. If the rider is thrown the blocks B leave the box A and release the stirrup straps. A pivoted tongue prevents the stirrup strap from being freed by any other than a very violent pull. The blocks B may be in separate boxes, or there may be but one block. For ladies' saddles the block E with its loop F for the stirrup strap fits into the box G fixed to the saddle flap by the plate H.

13,350. Boulton, A. J., [Gillespie, T. G., and Cassan, M. S.]. Nov. 4.

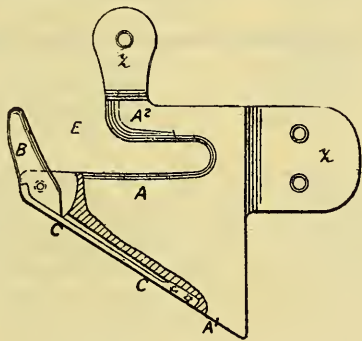
Fastening neck collars. The improvements relate to fastening the free ends of those collars which

are opened out and placed over the neck of the animal. The lower ends have fixed to them caps B and C, one C having conical undercut projections E to engage in the keyhole slots *a* when



the ends are suitably twisted and allowed to spring back. A central projection *b* on one cap takes into a hole in the other to ensure the due engagement of these parts.

13,678. Carter, J. Nov. 10.



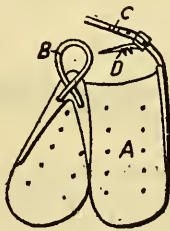
Stirrup straps, suspending.—Relates to a safety saddle-bar. The part A upon which the loop of the stirrup strap rests has its under edge *A¹* slanting upwards at a considerable angle, and has pivoted to its rear end the catch B shaped as shown. A spring C bearing against the catch B lies in a groove in the lower edge of the part A. A considerable gap E is left between the catch B and the part A² which carries the lugs *z, z* by which the saddle-bar is fixed to the tree. When the rider is thrown so that the stirrup strap is pulled directly backward the catch B releases it, whereas if the strap is pulled across the saddle the loop slides up the incline *A¹* and so becomes free, the gap E preventing it from catching above.

13,868. Day, R. W. Nov. 13.

Materials for making.—Consists in the use of circular or other suitable webbing of linen or like material for making harness.

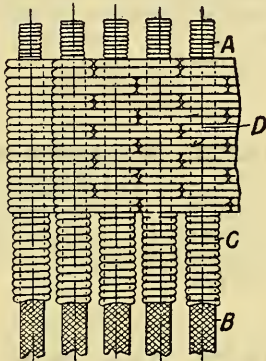
14,209. Auld, R. Nov. 20.

Pads for horse-collars.
The pad A, of leather &c. suitably stuffed, has a double wedge shape as shown, and is attached to the collar by the loop B in front and the strap C behind. This strap is fastened to the collar by the prongs D.



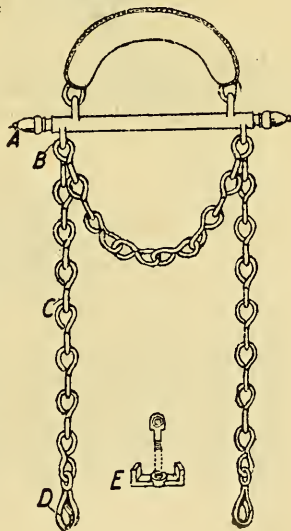
14,346. Bareire, J. G. Nov. 23.

Saddle-girths are made elastic in the middle for about eighteen inches, or throughout if preferred. Several modes of rendering it elastic may be used. The central part may be of pure thick india-rubber which extends as a thin coating over the rest of the girth, or of a webbing of threads of rubber in juxtaposition, or interwoven with other threads. The Figure shows the junction between the inelastic cords A and the rubber cords B in one method: The former cords are seen covering the latter at C, the cords A being further joined together at the junction by a transverse band D of webbing.



14,419. Ballinger, M. Nov. 24.

Rein-holders.—To the short metal bar or tube A carrying the hand strap B are fixed short straps or chains C provided with hooks D for hooking into two of a series of eyes E fixed to each rein.

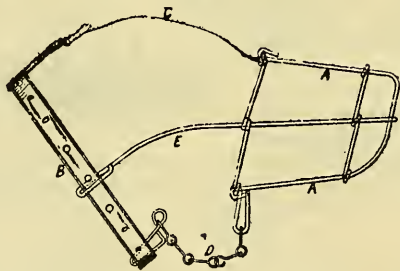


15,205. Nangle, W. C. Dec. 11.

Fastening straps, friction grip devices for. The invention is described with reference to a fastening for straps for securing a travelling-rug or a bundle of rugs, but it is applicable also for fastening harness. To the end of one strap A is fixed the body *a* of the screw clamp, the end of the other strap A' passing beneath the end of the milled-headed screw *a*. The surface against which the strap is pressed is preferably roughened, and the end of the screw is also roughened or has a roughened plate *f* pivoted to it.

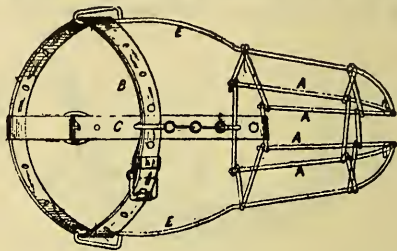
15,223. Warner, J. E. Dec. 11.

Whips. — The stock, shown in section in the Figure, is formed of a number of strips of triangular section cemented together.

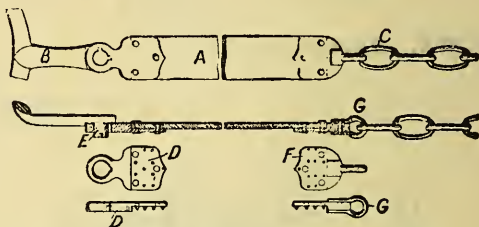
**15,515. Lowe, M. H.** Dec. 17.

Muzzles for dogs &c. The longitudinal wires A, A diverge in front and below, allowing the protrusion of the tongue and thus enabling the

dog &c. to lap. The muzzle is connected to the collar B by a broad band C of leather or metal



above, by the chain D below and by loops at the ends of the side wires E.

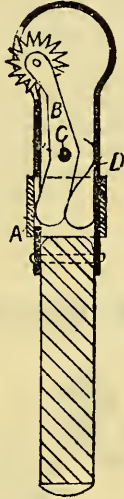
15,675. Ogden, S., and Peters, C. Dec. 21.

Traces are made of woven material with special couplings at the end, of which two modifications are shown in the Figure, which represents a trace A attached to a hame B and a draught chain C. The left-hand coupling consists of a looped plate D, which is riveted to the trace and may be provided with teeth to increase the holding power. The loop receives the pin E, which has a lug corresponding with a notch in the loop to prevent it from being unfastened except when desired. The right-hand coupling consists of a toothed plate F riveted to the woven strap and to a loop G. When the strap is required to have a varying length it is divided near one end, and one part is burnt with several holes and eyeleted while the other has a stud or hook &c. fixed to it. Loops are provided to keep the stud within the eyelet.

A.D. 1886.

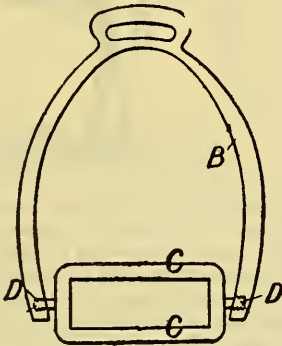
145. Whiting, J. E. Jan. 5.

Whips; spurs.—A rowel is placed in the handle or ferrule of a whip or riding cane so as to project through a slot formed therein. This rowel may either be fixed rigidly or it may be attached to an arm B pivoted at C and pressed outwards at the lower end by the spring D, a sliding ring A serving to urge the rowel outwards or allow it to be retracted. In one modification the spring is replaced by a projection placed on the arm above the pivot so as to be acted upon by the ring, and in a second modification the arm is fixed and the hollow handle is hinged.



245. Edwards, E., [Bourquet, L. F. A., and Decarpentry, A. E. N.]. Jan. 6.

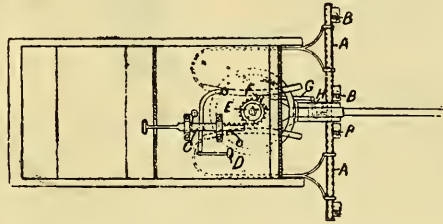
Stirrups.—The tread C is pivoted at D, D to the legs B, B, so that it may turn into the position shown. The object is to give ease in riding.



964. Barlow, W. A., [Jürgensen, J. F. C.]. Jan. 21.

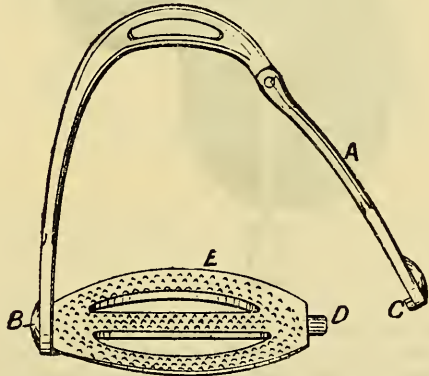
Runaway horses, releasing; fastening traces, draw-bolts for. The Figure shows a sectional plan of a carriage body fitted with the apparatus. The swingle-tree A is made hollow, and in it slides a bolt having projecting hooked pins B which can slide in slots in A, and to which the traces are

attached. A rack C can, by means of a treadle D operated by the driver's foot, be made to slide into engagement with and rotate a pinion E which



actuates levers F, G, H, and causes the bolt to slide in the swingle-tree and release the traces. The cross-bar to which the pole-chains are attached is made detachable from the pole so that the horses will be fully released.

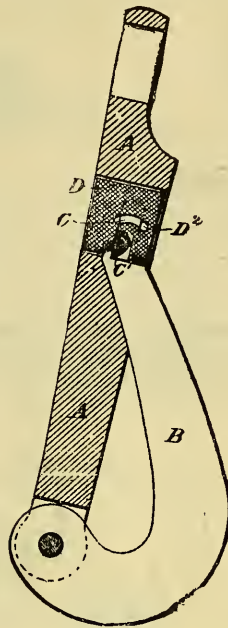
3440. Cope, J. March 11.



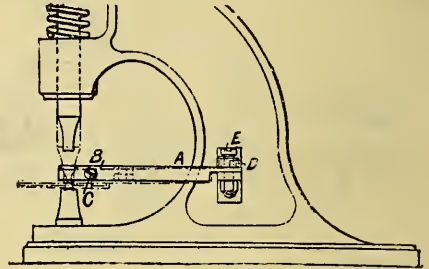
Stirrups.—Relates to a safety stirrup, in which the hinged leg A is connected to the tread E, pivoted at B by some form of catch, preferably one in which a pin C on the leg A with a recess near the pin takes into a bayonet slot in the projection D on the tread, the projection passing into the recess. The tread may also be hinged near its pivoted end for additional security.

**3653. Ruck,
R. M. March 15.**

Fastening, shackles or slip-hooks for. The Figure shows a longitudinal section of the hook, of which the tongue B is hinged below to the stem A and is held at its point by a hook C¹ of U-shape which projects through the slot C. This bolt is held by the rubber piece D in a slot at right-angles to the slot C. A slot D² is cut in the rubber to enable the movement of the bolt C¹ to be freer.

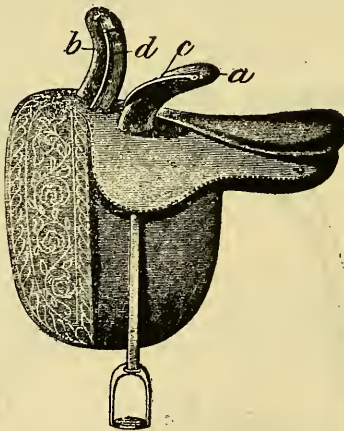


4286. Litchfield, C. March 26.



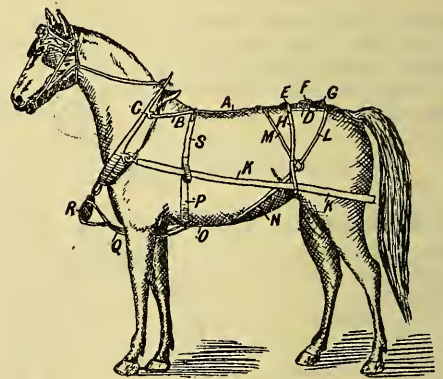
Riveting-machines.—Relates to machines for securing tubular rivets for connecting together parts of harness &c. The rivets are introduced between the dies on the machine by means of a swinging arm A having spring jaws B which are recessed on the inner side to receive the rivets and are adjusted by a set-screw C. A coiled spring D is inserted between the head E of the hinge pin and the arm A, in order to render it adjustable to the varying thickness of the material to be operated upon.

3700. Höhne, J. B. March 16.



Saddles, ladies'. The leaping head *a* and the near side head *b* are both arranged to swing upwards and outwards when the rider is thrown sideways, and so prevent the habit from catching upon either head. The leaping head *a* is pivoted near its top to the fixed metal fork *c*, while the near side head *b* is hinged to a stout metal strip *d* at the back, an arrangement which may be substituted for the fork in the case of the leaping head *a* if desired.

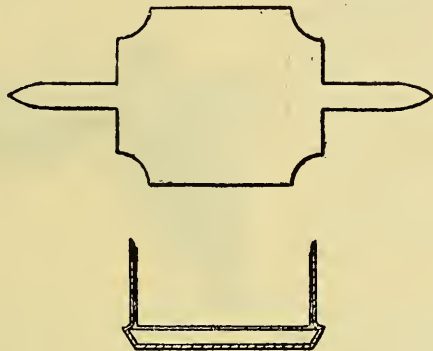
4353. Hemry, F. L. March 27.



Back and bellybands; breeching.—The main object is to remove pressure from the animal's spine and to give him freedom. The back strap A is forked at the front, the straps B being attached to the hame rings C. It is also split at the back, the straps D being bridged over by the metal pieces E, F, and G. To the piece E the hip straps H supporting the traces K are fixed; and to the piece G the breeching straps L are fixed. The ends of the breeching are held in place by the strap M attached to the back strap A, and also by the lower straps N, which connect it by means of the strap O to the bellyband P, and to the front hold-back strap Q, which is attached to the neck yoke R suspended from the collar as shown, or is attached directly to the collar. The back pad S or upper part of the bellyband R carries two rings at the top for holding the straps B apart. The

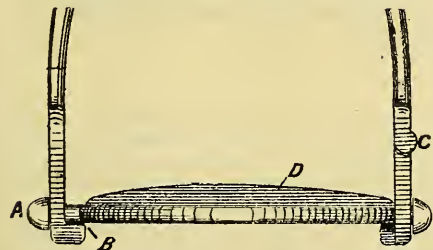
bridge F carries spring hooks for supporting the traces; these yield and liberate the trace if accidentally dragged while the horse is being hitched up.

4621. **Crosbee, S.** April 2.



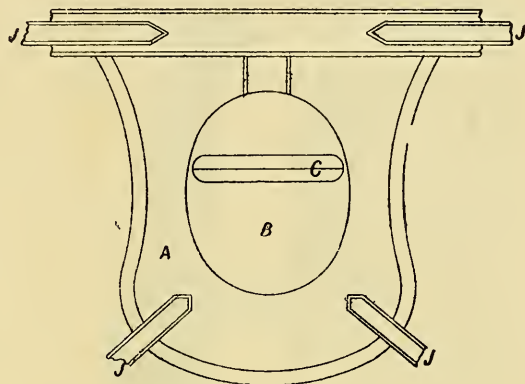
Ornaments, harness. These ornaments are stamped in a piece with the prongs for attaching, which are afterwards bent at right-angles, as shown in the lower Figure.

5171. **Nicholls, F. V.** April 14.



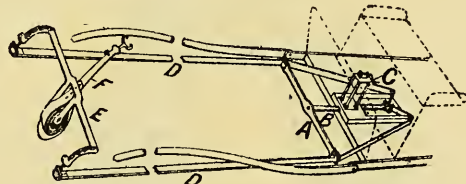
Stirrups, safety. Near the lower end of one leg is a hinge C, below which the tread D is pivoted; the end of the other leg is made with an open-ended slot and with projections B, upon which the flattened part of the pin A fixed to the tread rests, the other part of the pin, which is round, passing through the slot as shown. If the rider is thrown, his foot will cause the tread to turn on its pivots until the flat part of the pin A escapes from the slot, when the tread will swing down upon the hinge C and release the foot.

5178. **Lovatt, T. W.** April 14.



Knee-caps for horses. To the cloth foundation A carrying the attaching-straps J is sewn the pad B, preferably of leather in front and india-rubber behind, with a padding of horse-hair &c. between. The leather is also sewn to the rubber and cloth along the transverse line C so as to form a hinge.

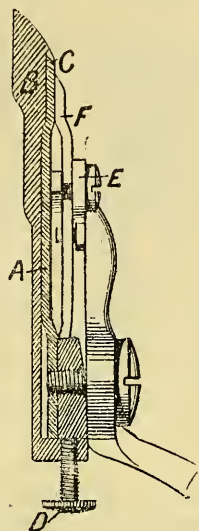
5261. **Pass, E. de, [Bourget, H.]** April 15



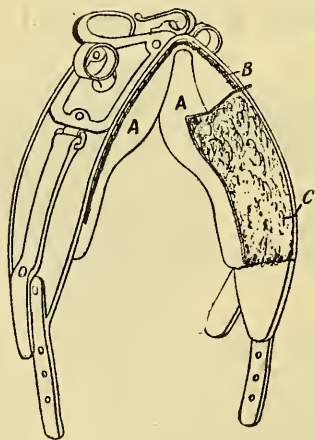
Stopping runaway horses, means for. The cross-bar A is driven forwards against the hind legs of the horse by a rack B, with pinion actuated through worm gearing by the handle C, the arrangement being fixed on the floor of the vehicle in front of the driver's seat. Straps D connected to the other end of the rack pass forward, and are connected to a cross-bar E, caused to occupy the position shown by a spring, pivoted to an adjustable support F connected to the collar or shafts; on operating the rack the bar E is turned down and pressed against the horse's fore-legs. Instead of the bar E a strap may be used, stretching between two spring bars fixed to the collar or shaft and connected to the straps D.

5650. **Bain, A** April 24. *Amended.*

Horse clippers and the like.—Behind the fixed comb A are fitted extra combs B of various depths to alter the length of hair cut. These are held on by recesses C fitting the ends of the permanent teeth and by a screw D bearing against the end of A. Instead of a set of combs there may be a single spring comb, which is pushed outward to different distances by a screw passing through the bridge E, and a slot in the oscillating comb F. Sometimes there are intermediate spring combs to ensure straightness of the hairs.



5805. **Lake, H. H.**, [Miller, J. P., Driscoll, F. F., and Curley, T.]. April 28.



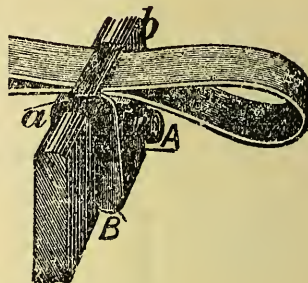
Pads.—The pads, used principally beneath harness and riding saddles, are made of rubber moulded approximately to the shape of the animal's back and vulcanized. The rubber A is then stitched to the leather part of the saddle as shown at B, a stuffing of hair &c. C being interposed. As the pad is waterproof perspiration cannot enter and render it hard, and as it is moulded to shape the tension on all parts is the same.

6093. **Smith, W. J.** May 5.

Stirrups.—A pad of rubber is fixed to the upper surface of the tread to prevent the foot from becoming cold or slipping.

6125. **Harcourt, G. J., and Shaw, E.** May 6.

Rein-holders.—The reins are gripped between the horizontal part *b* of the L-shaped arm B, and the U-shaped carrier A fixed to the splashboard or other part of the vehicle by a screw. The arm B is pivoted to the carrier A, and is urged by a spring in a direction away from the driver.



6185. **Roberts, W. C.** May 7.

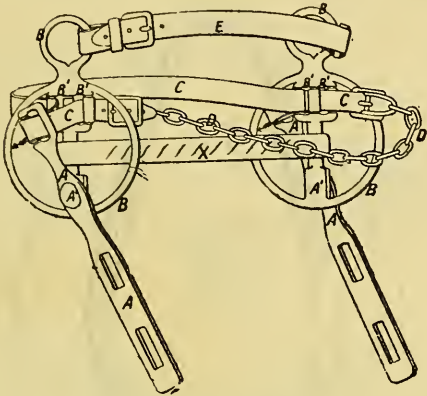


Rein-holders.—The Figure shows a holder for a single pair of reins, but by increasing the number of holding-loops two or more pairs may be held. The reins are passed through the holding-loops *a*¹, which have oppositely-threaded stems *a*⁶ screwing into nuts *a*⁵, so that on turning the handle *a* the loops *a*¹ are withdrawn or protruded and thus grip the reins against the slotted pieces *b*, or allow them to be withdrawn. The extent of motion of the eye-bolts *a*⁶ is regulated by springs and stops beneath the loops and by screws *a*¹⁴.

6802. **Hawkins, J.** May 20.

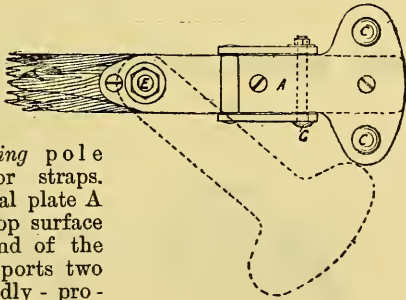
Bits.—The side levers A to which the reins are attached are pivoted at A¹ to the sides B, which carry the mouth-bar X, either as shown or pivoted at A¹. A noseband C (which may be roughened) is passed through the slots B¹, B¹ in each side piece, and through a slot in each side lever A, being continued by a chain D behind the animal's lower jaw.

A second strap E, also passing behind the jaw, is buckled to rings at the top of the side pieces. On pulling the reins the bit is drawn back as usual,



but, in addition, the strap and chain are tightened against the nose and jaw. In a modification, the mouth-bar and side pieces B are omitted, the strap passing behind the jaw being fastened to the top of the side pieces, and the noseband being attached to them a little lower down.

6814. **Blew, A. J.** May 20.

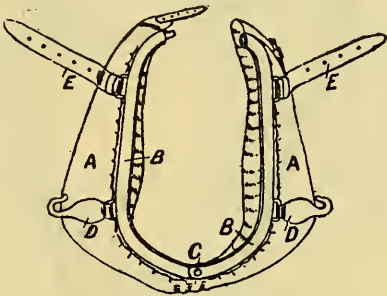


Fastening pole chains or straps. The metal plate A on the top surface at the end of the pole supports two downwardly - projecting roller-bolts C on which are placed the loops of the pole straps or chains. A plate on the under surface of the pole, pivoted at E, supports the loops on the bolts, and is secured by a bolt passing through a hole in the plate, or by a bell-crank frame on the pivot G which prevents the plate from moving laterally. The object of the invention is to facilitate the attaching and detaching of horses.

7094. **Baker, A., and Nesbitt, W.** May 27.

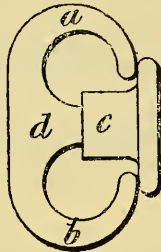
Collars, neck. The collar is specially adapted for use in collaries. The collar body A and hames B are divided and hinged at the bottom C, and are connected at the top by some form of spring catch. The hames are preferably hollow and are

fixed to the collar by screws &c. The draught hooks D and straps E are attached to the hames by staples.



7135. **Dove, L.** May 27.

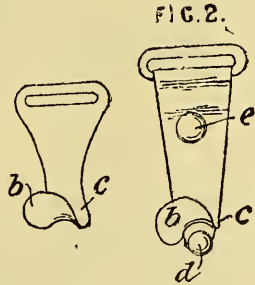
Fastening pole-chains. The Figure shows a link for connecting chains, which may also be used for connecting pole-chains to the pole crab. The entrance to the two hooks a, b is closed by a cap c fitted with a bayonet joint to the stem d; in the case of a pole crab the stem d has a socket fitting on the pole, and the hooks carry the chain.



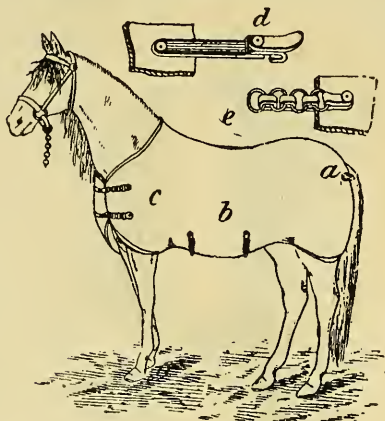
7297. **Wheeler, A. J.** May 31.

Fastening traces, hooks for. These hooks are made from sheet metal or wire and may be used for several purposes, as for braces, gloves, &c., and for securing traces to vehicles. The Figure shows two of several modifications suitable for braces.

The essential features consist in the laterally-projecting tongue b and the curved groove c for the ring or loop, which is inserted by a twisting movement. Fig. 2 shows a modification with a stud d for entering the ring after it has been twisted over the hook. This stud is fixed to a spring plate which is pressed back by a button e when the ring has to be attached or removed.

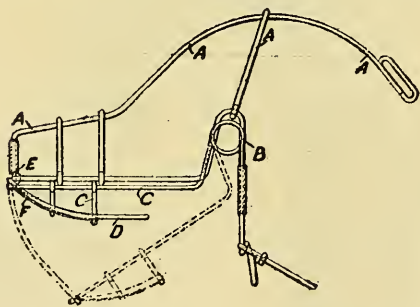


7339. Magoon, C. H. June 1.



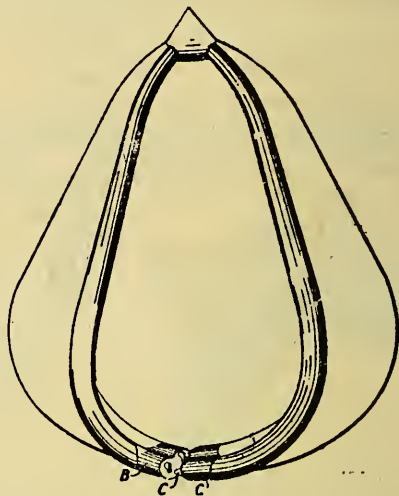
Clothing for animals.—Relates to horse blankets. The blanket is made to fit the horse as shown, and secured in position by a tail-piece *a* and special fastenings at *b* and *c*. These consist of an elastic band attached at one end a little distance from the edge of the cloth and bearing at its other end a hook *d* which engages with a chain *e* attached to the other edge of the blanket. The blanket can thus be adjusted to fit horses of different sizes.

7458. Edney, A. J., and Stanning, H. June 3.



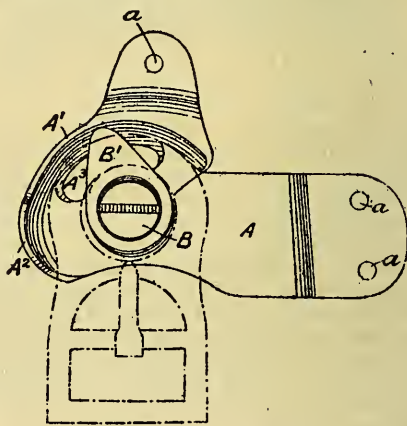
Muzzles for dogs &c. To the wire frame *A*, covering the upper part of the head and the upper jaw, is attached, by a moderately-strong spring *B*, a wire frame *C* covering the lower jaw. The end of this frame *C* passes outside and is guided by the rectangular wire frame *D* hinged at *E* to the frame *A*, and provided at the front with a plate *F* to prevent chafing. By this device the animal can open his mouth against the action of the spring for drinking &c. (as shown in the dotted lines), but cannot protrude his jaws so as to bite any external object.

7698. Boulton, A. J., [Gillespie, T. G.]. June 8.



Fastening neck collars. The collar is divided at the bottom, and over the ends are fitted two metal caps *B*, *C*; in the end plate of *B* are two holes formed as shown, and on *C* are two cone-like projections notched on the underside; the projections are pressed into the holes, and the notches catch over the edges of the holes, securing the parts in position.

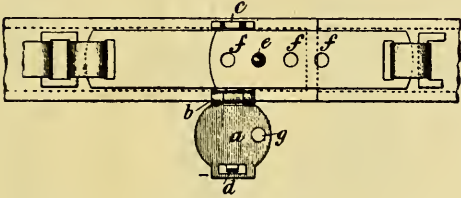
7906. Wheeler, A. J. June 12.



Stirrup straps, suspending.—The stirrup strap is buckled or otherwise attached to a backwardly-curved ring (dotted in the Figure) which passes over the hook *B'*. This is attached by a screw *B* or rivet to a plate *A* which is formed with an overhanging ledge *A'*, a projecting part *A''*, and also a slot *A'* to give more room for the ring and lighten the device. This plate is attached to the saddle-tree by lugs with holes *a*, or to the ordinary saddle-bar by the screw *B* and a flanged nut at the back.

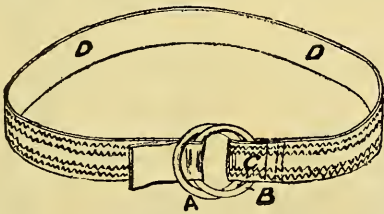
When the rider is thrown in any direction the ring carrying the stirrup strap frees itself from the hook B¹, but the ledge A¹ prevents its disengagement under ordinary circumstances.

7940. Brooks, J. B. June 15.



Dog collars.—There are three distinct improvements ; (1) an improved lock for fastening the ends of the collar ; (2) forming the bosses of metal collars by stamping the metal itself ; and (3) preventing leather collars from being cut, by securing wires along the edges. The locking-device consists of a box *a* which contains the locking-mechanism, and is hinged at *b* to one end of the collar, a staple *c* into which the bolt *d* of the lock catches, and a pin *e* which is passed through one of the series of holes *f* in the other end of the collar, and takes into the hole *g* of the lock. The lock is arranged so that the key is only necessary for unlocking.

7994. Bertram, L. B. June 15.



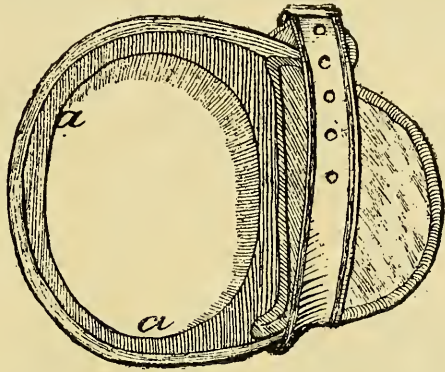
Fastening straps, horse cloths, &c., friction grip devices for. The fastening consists of two rings or pierced plates *A*, *B*, loosely secured to one end *C* of a strap &c. *D*. The other end of the strap is passed through both rings and returned through between them.

8187. Tongue, J. G., [Curtis, D.]. June 21.

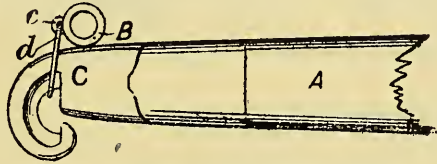
Horse-boots are lined with a plate of zinc *a* to give rigidity and to cool the fetlock.

(For Drawing see next column.)

8187.

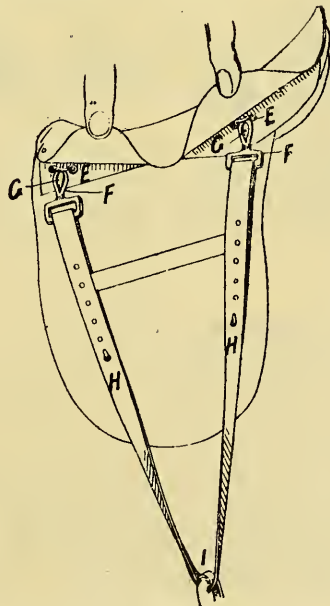


8243. Cook, R. T. June 22.



Yokes, neck, connecting to poles of vehicles. The hook *C*, shaped as shown and fixed to the end of the pole *A*, engages a ring *d* secured by eyes *c* to the centre of the neck yoke *B*.

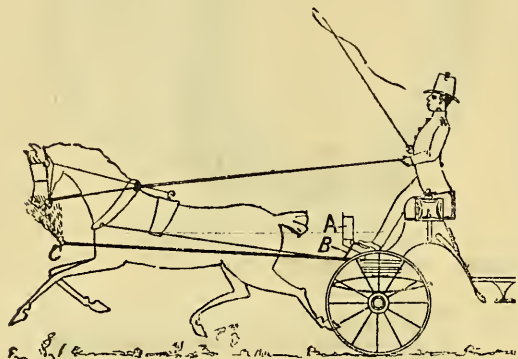
8383. King, J. C. June 25.



Stirrup straps, suspending.—Each stirrup *I* is hung at right-angles to its usual position from the

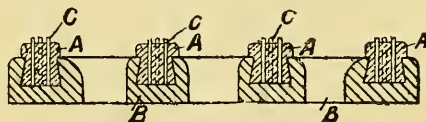
middle of a strap H, each end of which is secured to a loop F which passes over a hook G and is held thereon by a spring E until the rider may be accidentally thrown.

8820. Couteau, L. A. July 6.



Refreshing animals by liquid jets. The liquid is forced from a suitable reservoir by the rider or driven along a conveniently-arranged tube ending in a rose jet or connected to a hollow bit. In the Figure the liquid passes from the reservoir A through the tube B to the jet C.

8867. Carmont, W. E. July 7.



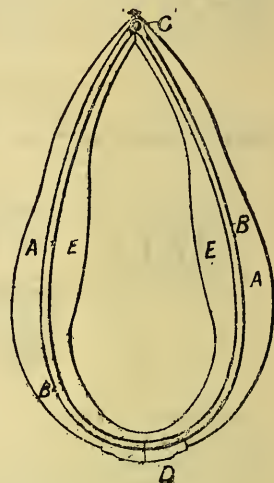
Stirrups, treads for. The india-rubber strips A forming the tread fit in dovetailed recesses in the metal plate B. Metal springs or pins C are embedded in the rubber to prevent slipping in wet weather.

9010. Ogden, S. July 10.

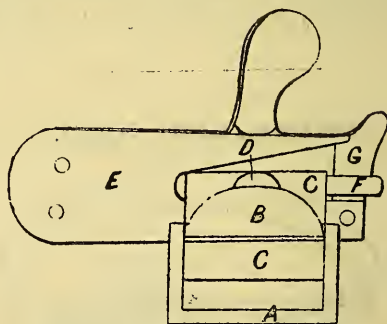
Traces of woven or textile material, or the materials for forming them, are treated with some substance which is insoluble in water, which will not readily wear away or separate from the fabric, and which at ordinary temperatures presents a smooth and non-adherent surface, the object being to diminish friction. Ozokerit, paraffin wax, and the like are suitable substances, and may be mixed, if desired, with suitable resins, pitch, &c., and with powdered plumbago, steatite, &c.

9078. Heckmann, N. J., and Nightingale, G. P. July 12.

Lining and padding; collars; saddles. — Collars, saddles, and such other parts of harness as are usually padded, are fitted instead with inflated india-rubber bags, preferably strengthened and protected by wire gauze. The collar shown is formed of two trough-shaped metal sides A with hames B and hinged at the top C, a snap fastening D being provided at the bottom. The inflated bags E are cemented within these trough-shaped sides. A metal shell may similarly be used in the construction of other parts of harness where convenient.



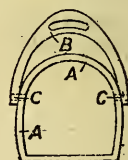
9361. Simpson, W. S. July 19.



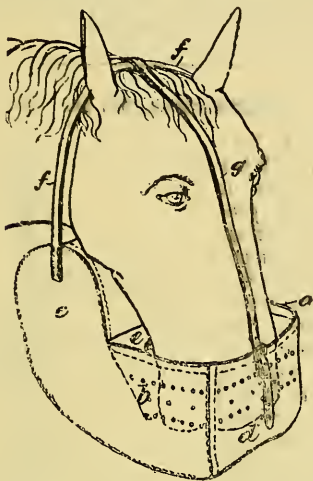
Stirrup straps, suspending, safety saddle-bars for. The loop A to which the stirrup strap is attached is supported in the bend B of the sheet-metal clip C, being held from accidental displacement by the spring tongue D. The clip rests upon the usual spring bar E, and is provided with a forked piece F engaging with the spring catch G. If the rider be thrown in an upward direction the loop A leaves the clip C, and if dragged sideways the clip leaves the spring bar.

9979. Macedo, J. A. de. Aug. 4.

Stirrups. — The stirrup A is suspended by the bow-shaped piece B pivoted to the sides at C, C, and carrying the eye for the stirrup strap.

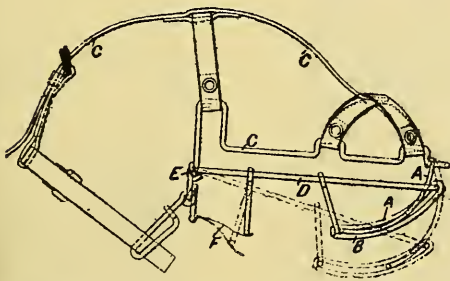


10,445. Cornut, R. Aug. 14.



Nosebags.—Consists of a bag divided, by an inclined partition *b* which passes nearly to the bottom, into two parts *c* and *d*. The food is placed in the part *c* and gradually fills into the part *d* as it is consumed. The opening *a* to the bag is strengthened by a ring or otherwise, and a flap *e* prevents any food from being tossed out by the animal or lost when the bag is not in use. The bag is suspended by the side strap *f* and front strap *g*.

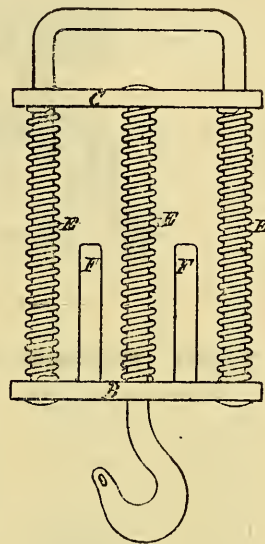
10,684. Eggleton, F. A., and Osborne, S. Aug. 20.



Muzzles for dogs. Relates to improvements on the invention described in Specification No. 7458, A.D. 1886, in which the hinged front piece *A* is guided by two curved links *B* and thus prevented from being bent by the animal's paw, or otherwise, which would prevent it from opening its mouth to drink. The piece *A* of U-form is hinged at the ends to the frame *C* for the top of the head and the links *B* are hinged to the frame *D* for the lower jaw. The frames *C* and *D* are hinged together at *E*, and the latter is pressed upwards by the spring *F*.

10,771. Jensen, P., [Siden, J. T. B.]. Aug. 23.

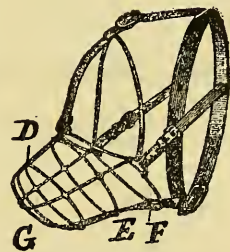
Fastening traces &c., spring hooks for. The device is for connecting traces &c. to vehicles and is designed to lessen jerks. Between two bars *B*, *C*, connected to the vehicle and trace respectively, are interposed a row of helical springs *E*, which may exert their force in resistance to compression, as in the Figure, or to extension. In the former case the bars *B*, *C* are guided by sliding on the rods on which the springs are coiled, and in the latter case by links. Stops *F* prevent the springs from being permanently deformed.



11,073. Garstin, A. Aug. 31.

Muzzles for dogs.

One form of muzzle is shown in the Figure, the distinguishing features being (1) the firm attachment afforded by the head straps, which prevents the parts around the nose from touching it; (2) the provision for lapping afforded by the two separated front wires *G*; and (3) the absence of any part to obstruct the sight. In a modification, the nose wires are bent in a special manner in the place of the complete rings *D*, *E*, *F*. Hardened leather strips are preferably used instead of metal wires.

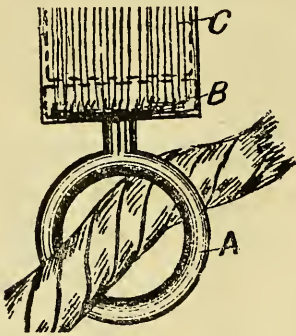


11,125. Dearden, B. Sept. 1.

Halters.—In place of the usual worked loop at the end of the halter, a metal &c. ring is employed. This ring *A* is formed with a T-piece *B* which is sewn between the webbing *C*, as shown.

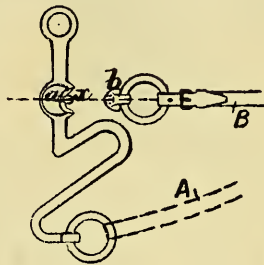
(For Drawing see next page.)

11,125.

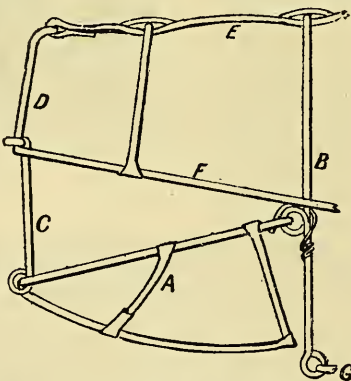


11,434. Pfändner, H. Sept. 8.

Bits.—The ordinary bar *a*, to which the rein *A* is fastened, is recessed at the back to receive the small bar *b*, which is connected to it by spring catches *x*, and fastened to a second rein *B*, which in bits for driving is led through loops in the rein *A*. If the bar *a* is hinged in the middle, the bar *b* is hinged also. When the animal attempts to bolt with the bit between its teeth the bar *b* is pulled backwards, as shown, to restrain it.



11,618. Nichols, W. E. Sept. 13.

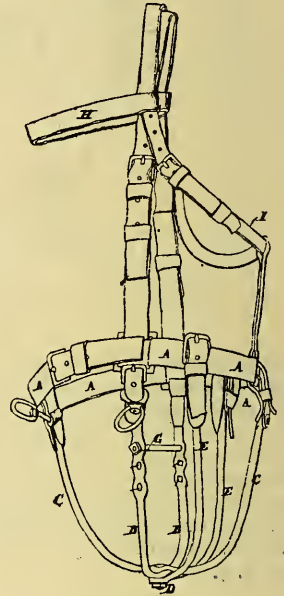


Muzzles for animals. The under jaw *A* is hinged to loops of the back ring *B*, and is fitted with springs which tend to close it. A frame *C*, with a loop sliding on the bar *D*, guides the under jaw and limits and guards the opening. The muzzle is connected to the collar by a strap *E*, which may be replaced by a wire, by loops on the side wires *F* (which may, however, be dispensed

with, the side wires terminating at the back ring *B*), and by a link *G*. The joints of the wires and the bottom cross-wire *A* are flattened to avoid scratching or hurting the animal.

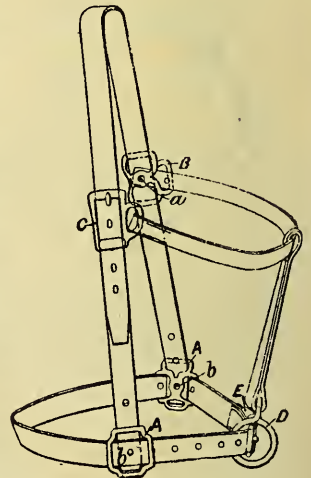
12,794. Parrington, M. B. Oct. 7.

Muzzles for horses. The muzzle, which is designed to prevent wind-sucking, biting the manger, &c., consists of a band *A* to which are secured two metal bands *B*, *C* fastened together by the nut *D* and aided by additional bands *E* if desired. An adjustable mouth-bar *G* connects the sides of the band *B*. This muzzle is fastened to the usual headstall, or is itself formed with forehead and throat straps *H*, *I*. It may, if desired, be covered with leather.

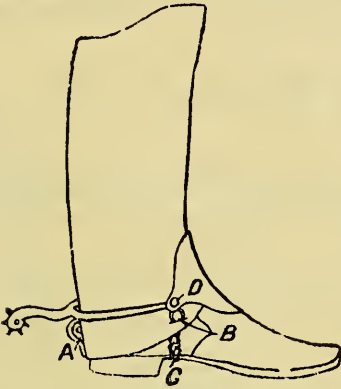


13,457. Coleman, V. A. Oct. 21.

Halters; fastening.—The connections consist of the nose-pieces *A*, the check-piece *B*, the buckle *C*, and the loop *D*, in addition to the usual buckle *E*. The centre or connecting arms of the pieces *A*, *B* are slightly depressed below the surrounding portion to give room for the crossing of the straps and to give a better appearance. The various straps may be connected as shown, or the rivets *a*, *b* may be replaced by fixed pins, or the straps may be sewn to the pieces *A*, *B*.

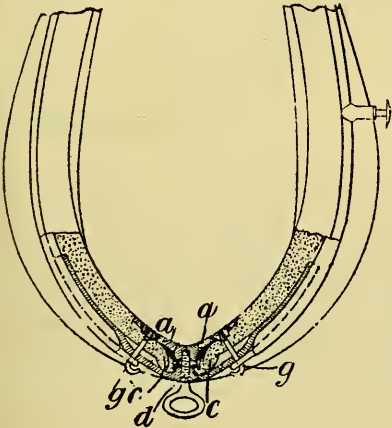


13,659. Bowley, R. C., [*trading as Bowley & Co.*]. Oct. 25.



Spurs and spur-carriers for cavalry. A boot is made of the ordinary "Blucher" form, except that the tongue is not attached to the sides but is cut to meet them so that it can be placed either before or behind the lacing. A separate legging is provided, closed behind and strengthened by a back strip. When it is to be worn the legging is first put on and then the boot, which is laced with the tongue outside, and the legging is then let down on the boot as shown. A leather spur rest A is attached to the heel of the legging, and a slot B cut in the inner side and strengthened by stitching &c. The spur is placed above the rest A and secured by the chain C, which is passed through the slot B so as to hold down the legging, and by the strap D. The strap D is cut large enough to cover the instep opening in the legging, and is blocked to shape.

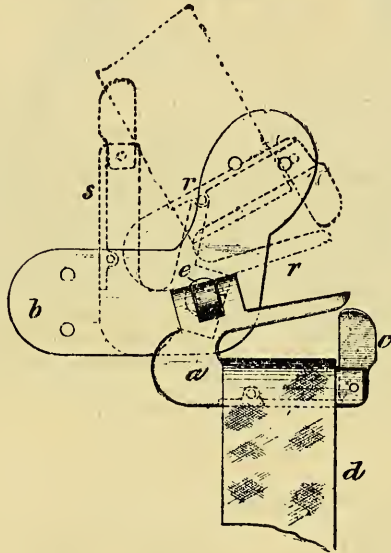
13,713. Clark, A. M., [*Dufresne, A.*]. Oct. 26.



Collars; fastening collars and hames, hooks and couplings for. The collar is divided at the bottom, and the lower ends c are enclosed in curved metal

pieces a, which may be connected together by any form of catch or by a special catch in which the T-shaped head of a bolt is passed through an oblong slot and turned by the handle d. The hames are secured at the bottom to the hook g, fixed as shown, and prevented from turning by a feather.

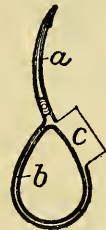
14,289. Rees-Philipps, H. Nov. 5.

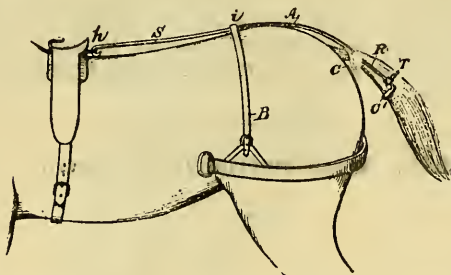


Stirrup straps, suspending.—Relates to a safety saddle-bar a, which may be of any ordinary type provided with the spring latch c, and is hinged by a knuckle joint to the axle pin e which is provided at the back of the fixing-plate b with a segmental disc the motion of which is defined by a stop. If the rider be thrown across the horse the bar a is pulled upwards by the stirrup strap d so that it turns upon the knuckle joint into the position r and then immediately afterwards, by turning on the axle pin e, into the position s. If the rider be thrown over the horse's head, the bar a simply turns on the pivot e, the spring latch in each case opening out to free the stirrup strap.

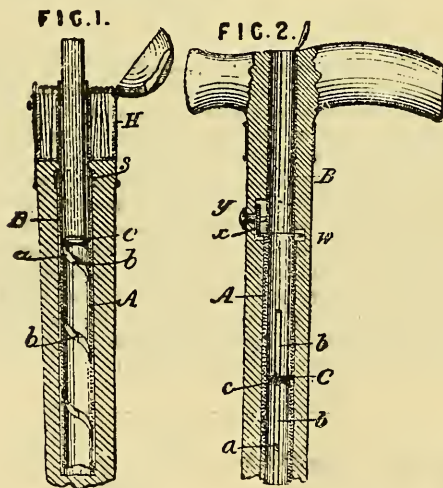
14,641. Barton, R. Nov. 12.

Tugs, shaft.—The shaft loop b, with the loops c and buckle frame a for the suspending-strap, are of metal cast in one piece, the buckle tongue being fitted subsequently.



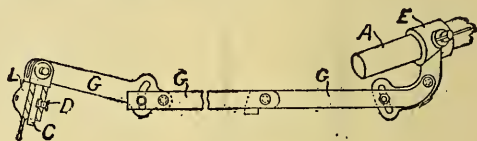
14,662. **Cheney, J. W.** Nov. 12.

Tails, devices for controlling.—The device is intended to prevent horses from swinging their tails over the reins or holding them in any undesirable position. The Figure shows one form of the device, which has several modifications in which certain parts are hinged and adjusted in various ways. The metal rods or tubes A carry the crupper C at one end, are continued in the rigid side straps B, and are attached at *i* to the back-strap S, which is either rigid or otherwise and is hooked at *h* to the harness saddle. Two rods R, one on each side of the tail, are adjusted in any suitable way to the rods or tubes A, and carry the tail support C' to which the tail is held by the strap T.

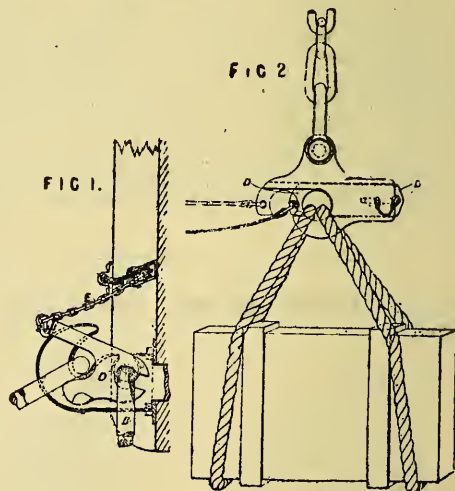
15,345. **Willis, A. J.** Nov. 25.

Whips.—Relates to the combination of cigarette and match receptacles with whip handles and stems. The whip is bored to retain a tube A, with helical slot *a*, containing an inner tube B, with longitudinal slot *b*. A disc C with pins *c* fitting the slots *a*, *b* supports the cigarettes and is raised or lowered on turning one of the tubes by suitable means. Either tube may be outside, and either may be fixed to the stick. In Fig. 1 the outer tube is fixed at *S* to the stick and the inner tube to the handle H, which may form a receptacle for

matches, or the inner tube may be prolonged and turned by a milled head above the match box. In Fig. 2 the outer tube is rotated by turning a stud *y* having a toothed wheel *x* engaging a wheel *w*.

16,030. **Lockwood, W.** Dec. 7.

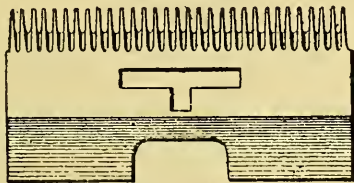
Nosebags and food containers, supporting. The nosebag or can containing food is supported by an arm which is fixed to the hame or shaft &c., and is either in one piece or folds or telescopes together. The Figure shows one form, in which a folding arm G is secured to the shaft A by a joint piece E and to a piece L secured to the nosebag &c. by a pin C and screw D.

16,497. **Hill, E. J.** Dec. 16.

Fastening, slip-hooks for. The invention is described with regard to uncoupling railway carriages and lifting-tackle, but is stated to be applicable for unharnessing horses from vehicles. The uncoupling-device consists of a lifter attached to the hook and actuated in any suitable way by hand for raising the chain out of engagement. Fig. 1 shows the application to a railway truck. The lifting-piece D turns on the link B as a pivot, and is actuated from the side of the vehicle by a chain E passing over suitable pulleys. The piece D may otherwise be in the form of a fork straddling the hook and sliding vertically on guide-pins, or it may consist of a single plate sliding in a slot in the hook as shown in Fig. 2, which shows the application to a chain for lifting goods. The piece D

slides horizontally in the hook, and when pulled out as shown in dotted lines it removes the slings from the hook.

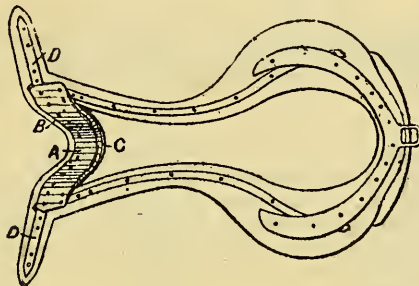
16,583. Bown, W., and Mitchell, H.
Dec. 17.



Horse clippers and the like.—The Figure shows the upper or movable comb of a hand-worked horse clipper. The longitudinal part of the T-slot slides on a rectangular block on the lower comb. The transverse part is occupied by the working pin at the end of the movable handle. A screw standing out from the slot block and a snug on the fulcrum of the handles carry a plate with side arms

having rollers which press on the upper comb. A wing nut on the screw adjusts the pressure.

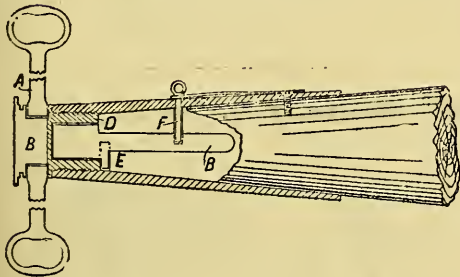
16,963. Edwards, S. Dec. 28.



Saddles.—Relates to gullet plates for saddle-trees. The Figure shows an underside view of the saddle-tree with the gullet plate riveted in place. The plate consists of the central part A, stamped to shape and, if desired, flanged along the edges B, C, and of the point plates D attached by rivets to the plate A. The rim C is preferably strengthened by a curved strip of steel, and the plate A is also preferably thickened at this part.

A.D. 1887.

242. Jeffryes, H. W. Jan. 7.



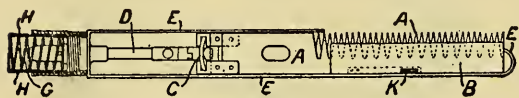
Fastening pole chains. The pole crab is removable to enable the chains to be quickly released from the

pole without it being necessary to unfasten them in the ordinary way. The crab bar A is secured to the end of the pole by a bolt B which is passed through the cap bush D and turned, the projection E on the bolt sliding in an annular quadrant after the manner of a bayonet-joint. The bush D has a keyway formed in it to allow the passage of the projection E, the bolt being secured in position after turning by a spring pin F.

513. Dawson, A. G., and Ridgway, A.
Jan. 12.

Horse clippers and the like.—Relates to a cutting-apparatus especially for clipping animals. The Figure shows the apparatus in plan with the top

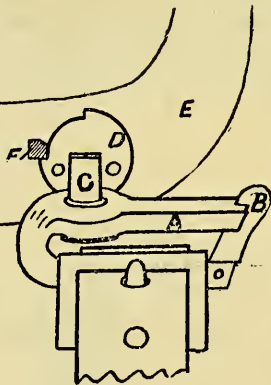
cover removed. The cutting-combs are in the form of strips A and project from a cylindrical casing E which constitutes the handle. Both combs are reciprocated by a swash-plate C on a spindle D.



The spindle is rotated by flexible shafting G consisting of coil flattened wire with a protecting-sheath H. The combs are nipped together by a doubled spring strip B, which is prevented from reciprocating by a spring bolt K. The combs can be shifted so as to disconnect the swash-plate from the shaft D.

687. Mayhew, F. W. Jan. 15.

Stirrup straps, suspending, safety saddle - bars for. The stirrup strap is suspended from the bar A, which carries the usual safety catch B and is pivoted to a pin C hinged to the disc D, which is pivoted to the plate E so as to be capable of rotating within limits defined by the stop F. In whichever way the rider may be thrown the bar A, turning on one or more of these pivots, is brought into such a position that the strain comes upon the spring catch B, which turns and releases the stirrup strap.

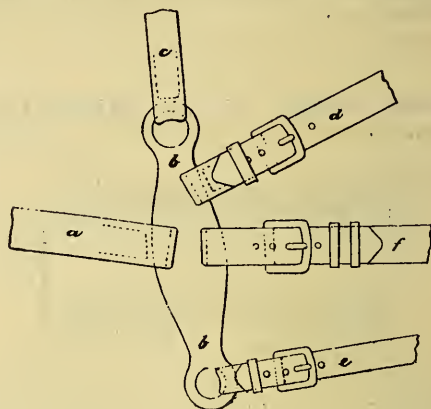


693. Buckle, J. W. Jan. 15.

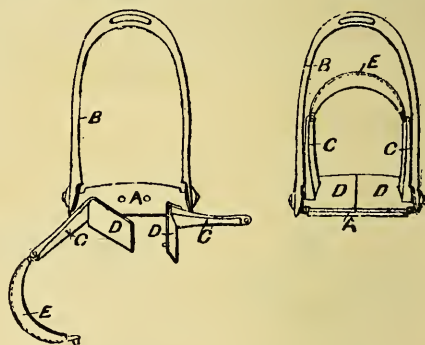
Bridles.—Relates to bridle attachments for controlling animals. The horse or other animal, fitted with a bit and reins, as usual, is further controlled by being forced to keep its mouth nearly shut by this device. It consists of a noseband a and a lip strap e connected by suitable side links b, which are held in place by the strap c which passes over the head and the strap d which passes round the jaw. In the case of animals that are in the habit of rearing or carrying their heads too high, there is attached a forked martingale f connected to a neck strap within reach of the rider.

(For Drawing see next column.)

693.

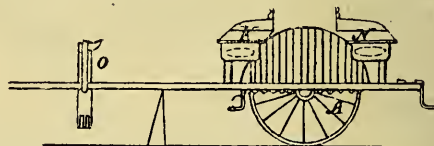


1000. Frost, H. Jan. 22.



Stirrups, safety. The Figure shows in two positions one of several modifications. The main tread A is pivoted to the long bow B and has hinged to it the inner legs C to which the parts of the upper divided tread D are fixed. A second bow E is hinged to one leg and fits by a catch in the other. The divided tread D may be omitted, and one of the legs C may be fixed to the main tread A. Again, both legs C may be hinged to the bow E, one leg being fitted loosely in sockets in the tread A. The bow E against which the instep presses is covered with india-rubber.

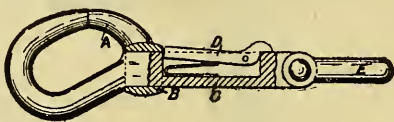
1109. Greene, J. D. Jan. 24.



Saddles, harness. Relates to a vehicle which has

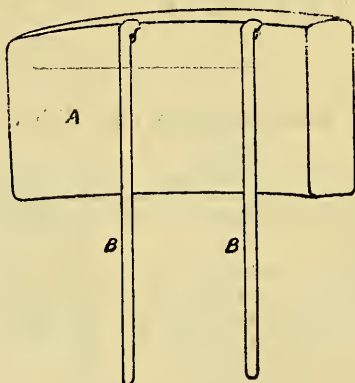
raised to admit the horse. One or more horses may be thus attached to the central pole and the outer shafts of the vehicle.

2385. McKay, I. M., and Stafford, H. E.
Feb. 15.



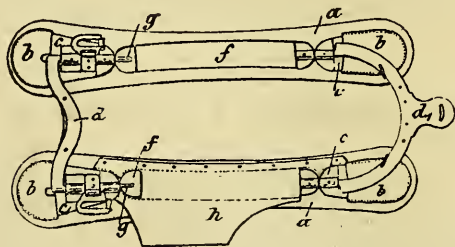
Fastening, hooks for. The tongue A is formed with a sleeve B which slides upon the square shank C, and is held in the forward position to close the hook by the pivoted spring lever D. The rear end of the shank carries a shackle E.

2405. Larkin, R. Feb. 16.



Collars.—A wooden block A, of the shape shown, and covered with leather, is attached to the afterwale of the collar at the draft by the two rods B. This block prevents the shoulder from being chafed by the tug.

2621. Abel, C. D., [Wilhelmy, W.].
Feb. 19.



Saddles, riding. To render "Hungarian" saddletrees self-adjusting to the animal's body, the

separate side bars *a* are formed of very thick leather strengthened by the steel plates *c, f*, which are attached to the side bars *a* by pieces of leather *b, h* nearly covering them, and are hinged to the longitudinal pivots *g* on the ends of the front and rear forks *d, d'*.

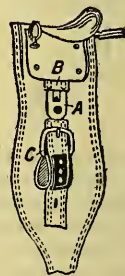
2926. Barnley, G. Feb. 25.



Labels and nameplates, attaching.—The name is embossed upon a band of metal or other suitable material between movable type or dies fitted in grooved rollers or in a press &c. The bands are attached to various articles by pins, perforations, cement, &c. For round objects, such as whips, the ends are brought together and fastened to or along with a clip A. This clip may be formed by bending two projections B on one end of the band

3060. Fines, T. W. Feb. 28.

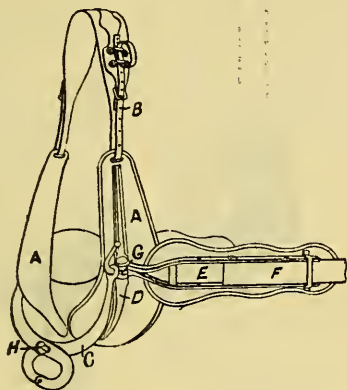
Back bands for harness saddles. A metal piece A, hinged in two directions at right-angles, is attached to the back-band B above the shaft-tug C. The strain on the back-band and consequent liability to fracture is thereby prevented.



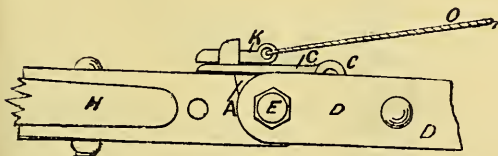
3489. Phipps, T. L., and Burman, W.
March 8.

Horse clippers and the like.—The Figure shows a vertical section through the comb plates. Anti-friction balls C are placed in longitudinal recesses in the top plate between the reciprocating comb cutter A and the top plate B. The edges of the recesses are turned slightly over as shown to retain the ball.

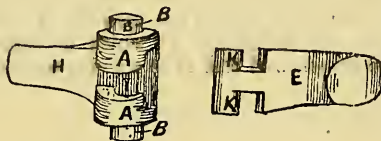
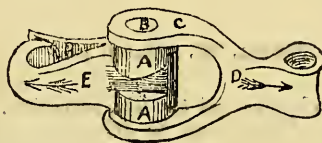


3496. **Harley, W.**, [Davis, S. B.]. March 8.

Collars; fastening traces and hames. The collar consists of two pads A, which are suspended at the top by the neck strap B and held at a fixed distance apart at the bottom by the yoke C, capable of adjustment by the nut H. Each pad is preferably of sheet metal strengthened by the bar D to which the yoke C and hame-tug E connected to the trace F are attached by a specially-pivoted block G. A modification of the yoke C and the method of fixing the trace to the hame-tug by cottars are described.

3855. **Berg, J. A.** March 14.

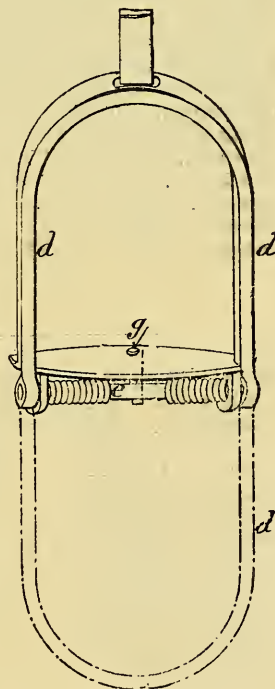
Runaway horses, releasing; fastening traces, draw-bolts &c. for. The Figure shows a shaft coupling, but a similar detaching-apparatus may be applied to release traces from their roller bolts. The shafts H may be released, in the event of the horse running away, by the driver withdrawing cottars K, the hinged locking-strip C of each shaft turning into a vertical position and falling through the forked end D of an extension of the under-frame. A transverse bolt E, passing through the ends of the fork, carries a loose wedge-shaped piece A which fits in a corresponding recess in the end of the shaft. The cord O, attached to the cottar, is coiled round a drum on a cross-shaft which is rotated by a cord within reach of the driver. In a modification, the strip C is secured by a wing screw.

3861. **Betjemann, S.** March 14.

Fastening, slip-hooks for. The end of the link E is formed with a T-shaped head K, which fits into a slotted chamber I in the cylindrical piece A. This piece A is provided with a tongue H by means of which it can be turned on the pins B, which are supported in the forked ends C of the other link D. The tongue H may be secured by a suitable catch to prevent A from turning and releasing the link E.

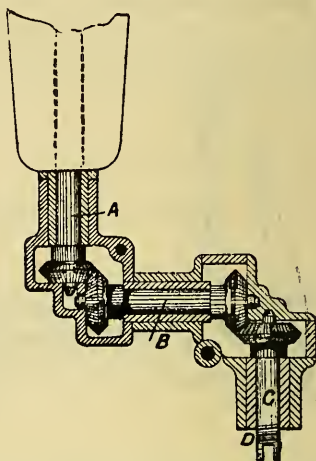
4049. **Maclure, A.** March 17.

*Stirrups.—*To assist riders in mounting a lower step is either fixed to the tread or arranged to turn up against the bow. The Figure shows one method of hinging this step *d*, in which it turns with a spring bar *e* provided with a catch having a button *g*. After mounting, the button is depressed and the step springs up. In a modification, the step is provided with a pinion and the tread with a rack, so that by depressing the tread the step is raised as before.

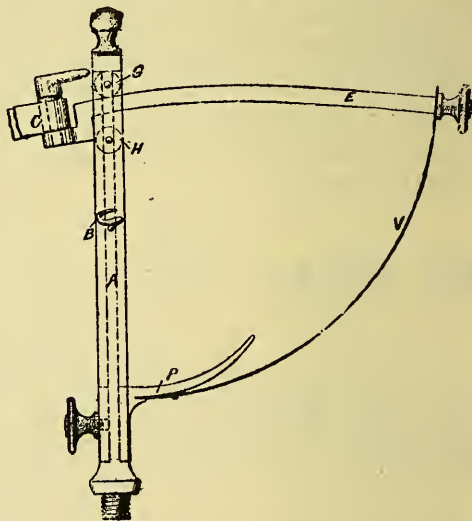


4099. Clark, W. March 18.

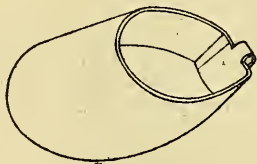
Horse clippers and the like, actuating. In order that the clipper may be driven in any position from a fixed motor without using flexible shafting, the power is transmitted through shafts connected by bevel gear so as to be capable of turning in planes at right-angles. The spindle A of the clipper can turn round the spindle B and the latter around the spindle C, which is coupled by a nut on its screwed end D to a swinging shaft.

**4184. Lake, H. H.,** [Guinet, L.].
March 19.

Training and breaking-in horses, harness for. Relates to spring supports for bearing-reins. There are two forms of support. That shown consists of a standard A which is to be screwed to the saddle, and which carries between rollers G, H the bar E, to which short reins C are attached. A flat spring V is attached at one end to the bar E, and at the other to the sliding piece P, which can be adjusted at different heights on the standard A. Hooks B are provided for a forked strap leading to the crupper. In the second form of apparatus the spring V is replaced by a helical spring enclosing the bar E, and enclosed in a tube attached to the standard A. The spring support is easily fitted and removed, and may be used while the horse is being driven or while in the stable, all the harness necessary being the saddle and its attachments.

**4621. Grimshaw, E.**
March 28.

Horse - boots. — The boots are moulded in preferably one piece of rubber and without the usual opening at the back. Perforations or corrugations for ventilation may be made.

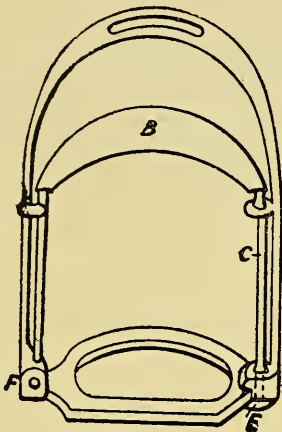
**4752. Adcock, E.,**
and **Crawcour,**
W. H. March 30.

Horse boots or poultices. Consists of a leather sole C, to which is attached the upper part A of fleeced stockinette or similar material, which has a loose lining D forming a bag, and is provided with attaching-strings E.

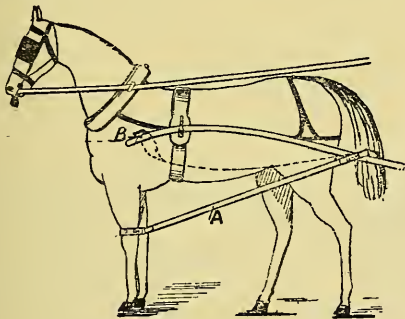


5238. Haslam,
T. J. April 9.

Stirrups, safety.
The tread is hinged at F and is released so as to free the rider's foot by a catch E on the vertical pivoted rod C, carrying the inner bow B, against which the rider's foot presses in the case of a fall.

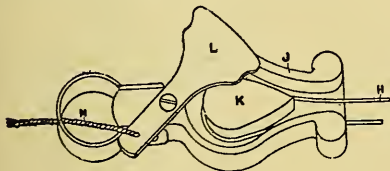


5440. Niblett, W. C., and Hesse, G. E.
April 14.



Hobbles for attachment to vehicles. A strap A attached to the shaft is secured round the fore leg of the horse above the knee, thus preventing it from running away when left alone. When not required, it is fastened to the shaft at B, as shown in dotted lines.

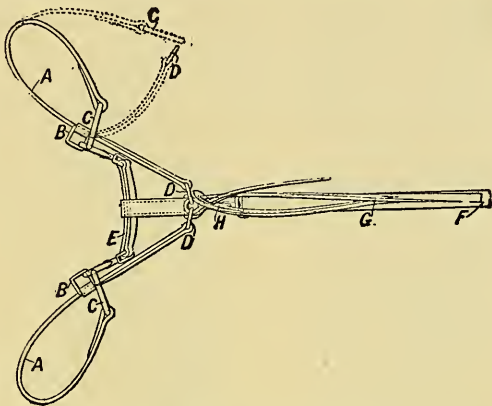
5514. Tambling, L. S. April 15.



Rein-holders.—The reins H are gripped in the circular recess of the piece J by the spring block K. They are prevented from accidentally leaving the recess by fastening the string N, by which the device is attached to the vehicle, to the pivoted

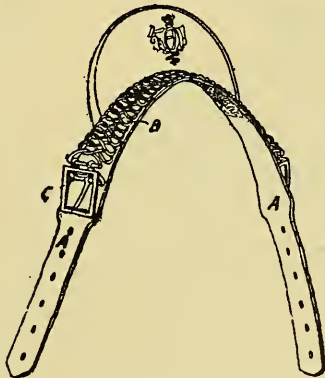
plate L, or by passing the string itself across the piece J.

5640. Edwards, E. W. April 18.



Dog leashes.—The Figure shows the slip as used for two dogs, but by dispensing with one collar and the connecting cross-piece, the device may be used for slipping a single dog. The collars A each carry a pair of loops B arranged close together, and a large loop C and small loop D at the ends. The connecting cross-piece E is hooked to one of the loops B on each collar and is itself hooked to the lead F. The small rings D after being passed through the larger loops C are held by the end of the slip strap G, which is passed twice through the leather loop H attached to this strap. On pulling the slip strap G the dogs are released.

5764. Read, F. April 20.

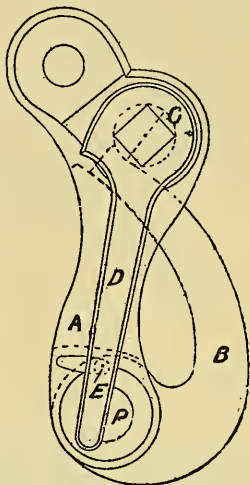


Collars ; fastening hames. The tops of the hames are formed with, or attached by links to, buckles to which the ends of the strap A are

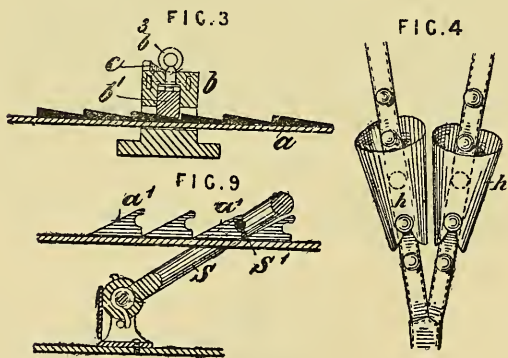
secured. This strap, which may form part of the housings of the collar, has a chain B buckled to it by the special buckles C, which have two separate bars, one over the other, made in the frame of the buckle.

5886. Hone, G. J. April 22.

Fastening traces, slip-hooks for. The tongue B of the hook is pivoted at P to the body A, and catches against the pivot C of the lever D, which has a pin E at its other end to catch in a hole in the body A of the hook. The pivot C is eccentric, or a gap is cut in it on one side so that on turning the lever D outwards the tongue B is freed.



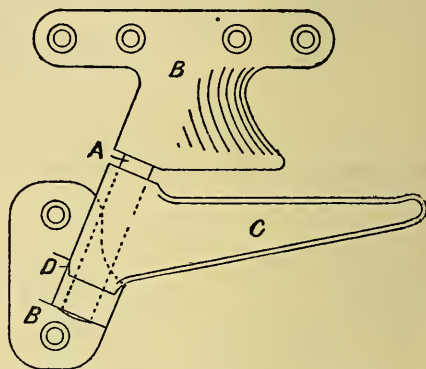
5897. Dannhauer, C. April 22.



Bridles; rein-holders; saddles.—The object is to be able to restrain a restive horse by drawing the snaffle or other reins backwards into a position from which they can only return when suitably released. There are three principal forms, as shown in the three Figures. In the first form, Fig. 3, a strip with ratchet teeth is fixed to the rein *a* which runs through the piece *b* fixed to the saddle or other convenient part. This piece is provided with a spring pawl *b'* which is raised to release the rein by pulling the spring wedge *c* beneath the roll or projection *b''* by a cord leading to the driver. In a modification, the spring pawl *b'* is hinged and is released by drawing it backwards. In the second form, Fig. 4, the rein is provided with buttons adapted to catch in the hollow conical pieces *h*

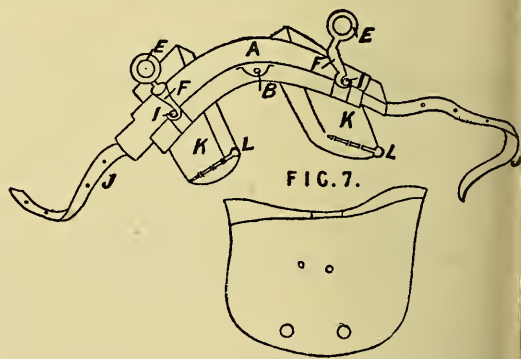
fixed to the harness saddle in place of the usual terrets. In the third form, Fig. 9, in which the ordinary driving-reins are used also for safety-reins, each rein carries catches *a'* adapted to engage with a cross-bar or other suitable part *s'* of the terret ring *s* formed with a spring tending to keep it in a vertical position. The rein is released by drawing it backwards and downwards. For riding horses the reins may run through rings like *s* attached to the martingale.

6156. Rolleston, L. April 27.



Stirrup straps, suspending, safety saddle-bars for. Relates to improvements on the invention described in Specification No. 559, A.D. 1885. Upon the inclined rod A secured to the saddle-tree by the pieces B, B turns the bar C which supports the stirrup strap. If the rider is thrown forwards the bar C turns upon the rod A and frees the strap. An incline D prevents the bar C from turning under ordinary circumstances.

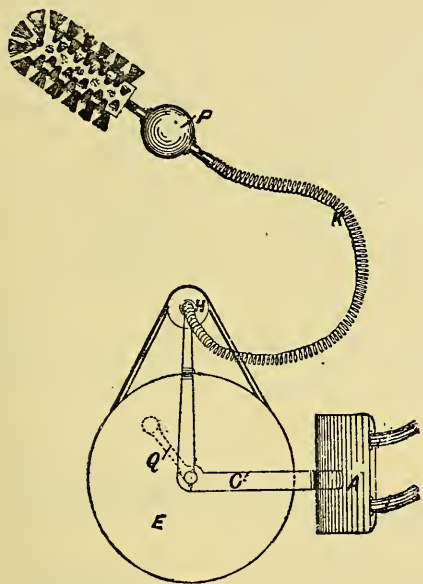
6271. Saunders, J. April 29.



Saddles; fastening backbands. The backband is held in the groove in the bridge A by catches E passing from the terrets E to the heads of the

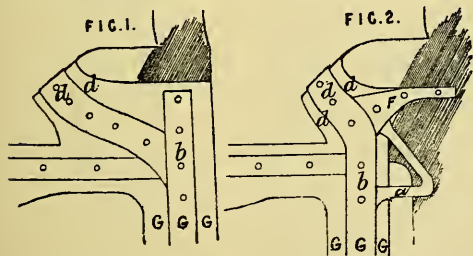
bolts I. An eye B is made for the crupper. The four bolts I, to two of which the terrets are screwed, serve to attach the pads K formed with openings closed by screws L. These openings are arranged to enable the padding to be lessened or increased at will. The girth J is attached to the pass K. A cover, Fig. 7, of leather &c., may be attached to the bolts I between the bridge and pads.

6338. Haddan, H. J., [*Patersen, N., and Fritze, A.*]. April 30.



Brushing-apparatus for cleaning animals.—The shield A, which is strapped to the operator, carries the angle-piece C' in which the wheels E and H bear. The rotary motion is given to the brush from the handle Q by means of the flexible shaft K, the loose globe P serving as a handle.

6399. Mayhew, F. W. May 2.

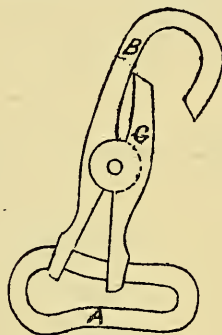


Saddles for ladies. In this invention the new pattern or French saddle-tree for ladies is modified

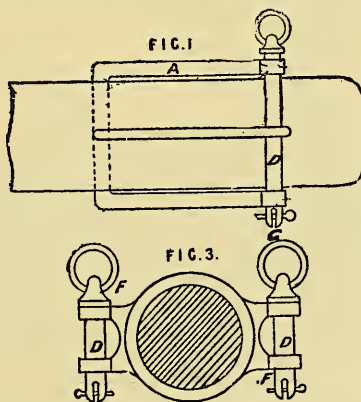
in several respects to prevent chafing the horse. Fig. 1 shows a side view of the front and part of the "side bars" of the French saddle-tree for ladies; and Fig. 2 shows a similar view of the improved form. The bearing *b* of the fore part on the "off" side is brought considerably back, and the "off point" *G* is also brought back so as to be in a line with the "bridge" *d* or nearly so. A strong support *F* which takes no bearing on the horse is made to support the "safe" or knee pad or the "off" pommel. A metal loop *a* for the girth strap is attached as shown.

7143. McCabe, A. R., Thomson, T. W., and Thomson, J. May 16.

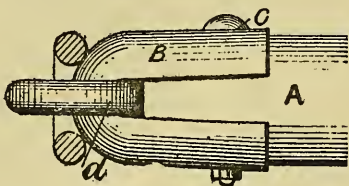
Fastening reins and traces, hooks for. A link A passes through prolongations of the hook B and tongue C. To close the hook the link must be turned through a right-angle. The device is applicable for fastening bridle reins, harness traces, &c.



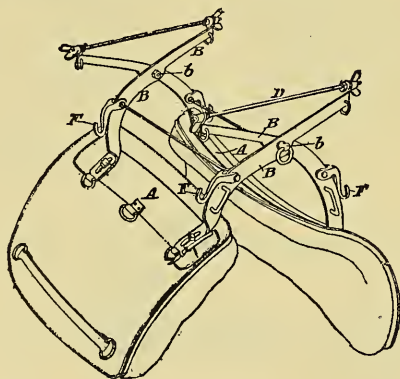
7146. Fitzmaurice, W. E. May 17.



Fastening traces and pole-chains, draw-bolts for. Relates to a safety buckle and bolt for the traces, pole traces, and pole-pieces. The buckle consists of a three-sided frame A closed by a bolt D split at its end C. In a modification, one of the sides of the frame is also made removable. Fig. 3 shows the application of the bolt D to the pole piece F. If a horse falls the bolts may be drawn to free it.

7552. **Smith, M.** May 25.

Fastening traces. Consists in fitting each end of the spreader for the long gears or traces of horse teams with a slotted thimble or cap B to which the chains are secured. The chain link *d* is first placed in the slot, and the cap B then pushed on the end of the spreader, and secured by a bolt C. In the event of the bar A breaking, the caps may be fitted on the trimmed ends of a hedge stake, thus forming a temporary spreader.

8081. **Stewart, H. R.** June 4.

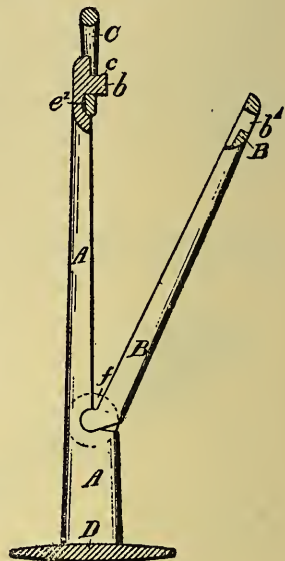
Pack-saddles.—The separate side flaps of the saddle are provided with side plates A to the ends of which cross-arms B are connected. These arms are pivoted together at *b* and may be adjusted in two ways so as to vary the inclination of the side flaps. In the Figure the adjustment is effected by rods D; but in a modification the arms terminate at the pivot in two discs adjustably connected by bolts in slots. Hooks F support the paniers.

8138. **Everitt, T.** June 6. *Drawings to Specification.*

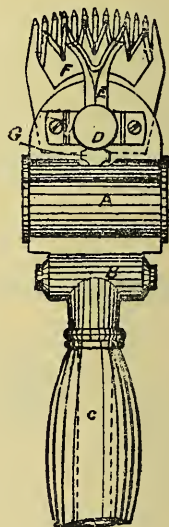
Tails, adjusting for cutting.—The invention consists of a support to elevate the dock while the hair is being cut. A T-shaped piece is placed under the dock and kept in position by a V-strap buckled to a strap from the surcingle.

8177. **Williams, J.** June 7.*Stirrups, safety.*

The Figure shows a section of the stirrup, which is released from its supporting-link C when the rider is dragged. To the bow A, carrying the tread D, is hinged a second bow B. These bows are recessed to receive the link C, and one of them carries a broad pin or plate *b* fitting into a slot *b'* on the other bow. The hinder of these two bows (in the present case A) preferably projects slightly within the other, so that the strain of the foot in the stirrup separates the two bows and releases the supporting-link. To lessen the risk of unwished-for separation, the link C may have studs fitting into recesses *e'* in the bow A.

8452. **Bell, W., Broomhead, J. W., Jones, W. A., and Suckling, J. L.** June 11.*Horse clippers and the like.*

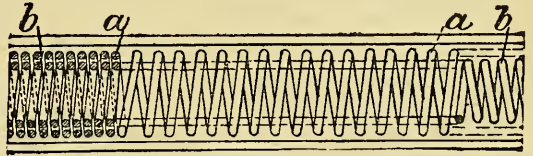
—An apparatus for clipping animals and cutting hair has fixed and reciprocating combs like a horse clipper, and is worked by compressed air. The air is supplied to a double piston in the cylinder A through a distributing-valve. It is led from the compressor to the valve by flexible tubing and the hollow handle C. The distributing-valve is either of the piston or D kind and may be worked either by tappets or by air let out from the cylinder A near the ends of the piston stroke. Motion is communicated to the cutter F by a lever E fulcrumed at D. D is a conical-ended screw which serves both as a fulcrum and to adjust the pressure of the cutter on the comb. The



lever E is supported at G by a roller at the end of a swivel or by a sphere occupying a cavity in the frame.

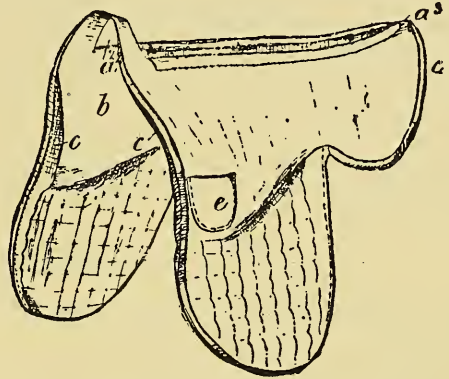
8871. Clasen, I. F. June 20.

Whips.—Two or more helical springs are fitted together concentrically to form a compound spring which may be used for the necks of whips, and for various other purposes. The Figure shows one of the coils consisting of two concentric springs *a* and *b*.



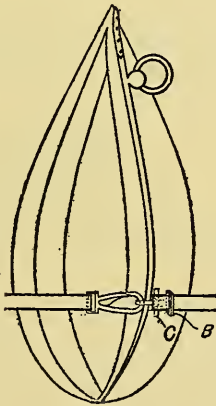
9110. Wheeler, J. June 27.

Saddles, riding, panels for. The part *b* of the panel, which bears upon the animal's back, is made of an elastic and practically non-absorbent material, such as leather. The lining below this and upon the edges *c, c* is of serge or like absorbent material, which also allows of the insertion of an awl for manipulating the stuffing. The two sides of the panel may be separate or connected by the bridges *a²* and *a³*, and the top edge is arranged so as not to touch the saddle-tree, which rests upon the panel with its "points" in the pockets *e*. The top part of the upper surface or that opposite *b* is also of leather.

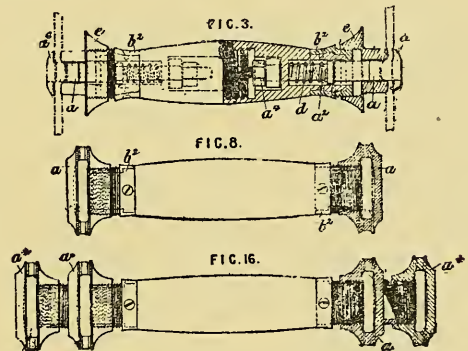


9221. Shaw, J. C. June 29.

Collars; pole-chains; traces.—Relates to tandem and four-in-hand harness, and the object is to prevent the objectionable motion of the collar of the "wheeler" when the pace of this animal is slower than that of the "leader." In the form shown, the "leader" trace (to the left) is hooked to the end of the "wheeler" trace, which is provided with a pin *C*, against which the loop *B* of the hame tug presses when the pace of the "wheeler" is greater than that of the "leader." The "leader" trace and the "wheeler" trace may be formed as one continuous strap. In another form, in which a continuous trace is used, the trace is slotted and prevented from sliding past the hames beyond a certain distance by a tug with a button or cross-piece at its free end, which tug passes through the slot. In the application to four-in-hand harness, the ends of the pole-chains are passed through slots in the hames and are fastened to the ordinary breechings.



9295. Roberts, W. C. June 30.

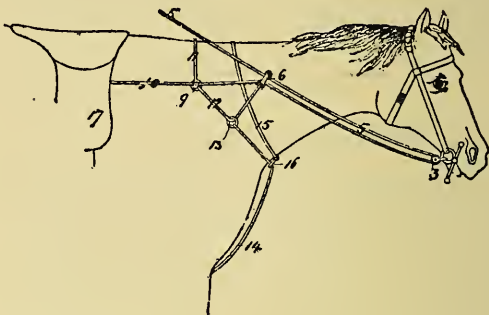


Rein-holders.—Relates to appliances for use in holding reins, such as are described in Specification No. 6185, A.D. 1886. In the form shown in Fig. 3 each rein (shown in dotted lines) is passed through the eye *a* of an eye-bolt *a²*. The rein is gripped between the top and extended parts *a⁶* of the eye, and the parallel projections on the piece *e* which is slotted to receive the eye-bolt. This piece *e* is screwed to a ferrule *b²* with threads of the opposite hand to the corresponding ferrule at the other end of the handle. A spring *d* urges the eye-bolt outwards, and lock-nuts *a⁴* prevent it from going too far. The two parts of the handle are screwed together in the middle. On turning the handle, both reins are either gripped or released.

In the form shown in Fig. 8 the reins pass through slotted pieces *a* which screw upon oppositely-threaded ferrules *b*² fixed to the handle. The form shown in Fig. 16 is for double reins. The two outer reins are first passed through the outer slotted pieces *a*², and are tightened therein by turning the handle, and afterwards the two inner reins are passed through the slotted piece *a* and similarly tightened.

9359. Kennedy, W. July 1.

Bridles; martingales.—The rein 5 on each side passes through a link 6, round a roller 3 on a link attached to the bit, and back again to the link 6, to which it is fixed or through which it passes to a ring 9. The link 6 may be held in the required position by any of the various arrangements of straps described in Specification No. 1455, A.D. 1887, or by employing an additional ring 13, to which the martingale 14 is fastened, and through which the strap 12 passes as shown or *vice versa*. The link 6 may be further secured by a strap passing direct to the saddle 17. Straps 10, 11 support the ring 9, and a strap 15 supports the martingale ring 16.



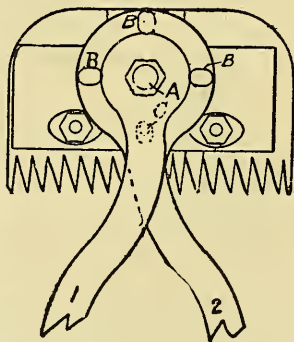
9547. Mossberg, E. July 6. Drawings to Specification.

Fastening traces, spring attachments for. A plate spring, either flat or curved, is interposed between the whipple-tree and the trace-hook &c. The flat spring is secured to the whipple-tree at the centre, and, when the draught animals pull, the spring is curved, the amount of bending being limited by links at the ends which transmit the extra pull.

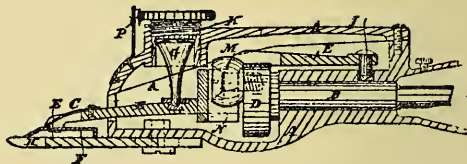
10,107. Redfern, G. F., [Hadmar, L. A. D.]. July 19.

Horse clippers and the like.—The

combs can be set at various angles to the handles. The Figure shows them inverted. The central pin A has a round part on which the lower handle 2 turns, and a hexagonal part on which the upper handle 1 can be placed in any position. The lower handle ends in a disc pierced with six holes B. A pin C engages one of these holes and a hole in the upper comb. Instead of holes, the head of the handle may have six teeth to engage two on the comb, or it may fit over a loose hexagonal ring having one tooth. When two handles of different shape are used they may be reversed for use with either hand.

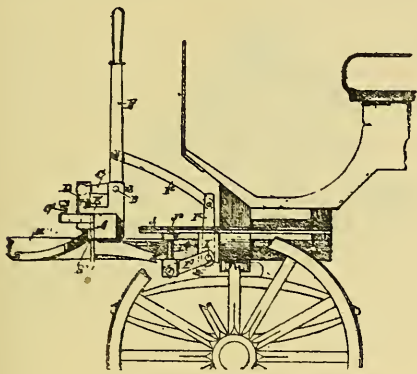


10,422. Newton, H. E., [Australian Electric Co.]. July 26. Amended.



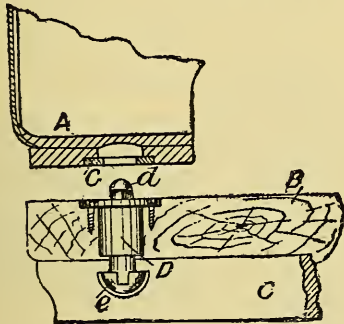
Horse clippers and the like.—Relates to sheep-shearing apparatus of the kind cutting by means of fixed and movable combs. The fixed comb H is screwed to a casing A. Holes in the movable comb F are engaged by pins at the ends of three fingers C projecting from an arm E, which oscillates about a pivot I. This arm is formed with a stirrup enabling it to be reciprocated by a balanced crank D on a spindle B, which passes through the handle, and is driven by flexible shafting. The crank-pin carries a hardened roller M, and the stirrup has a lining N sprung in it. In order to keep the two combs in contact, the middle finger of the arm E is elastic, and from a recess in the arm itself rises a pear-shaped piece G with a spherical top which occupies a broad hollow screw stud K used for adjusting the pressure. A spring tooth P prevents accidental turning of the stud by engaging its notched head.

10,597. **Durell, A. D.** July 30.



Runaway horses, releasing ; fastening traces, draw-bolts for. Means are provided for detaching the pole or shaft and traces to release runaway horses. The Figure shows the application to a pair-horse vehicle. The splinter-bar A has attached to it four or more brackets E having bearings for a cross-shaft B on which are fixed four arms C carrying vertical bolts D which pass through holes in the brackets E and secure the roller bolts or trace blocks G¹. The pole H is secured by a plate H¹ fixed to it and held by the bolts D. The driver, by pulling over a hand-lever F on the shaft B, will cause the bolts D to rise and release the pole and the trace blocks G¹. In applying the invention to a single-horse vehicle, the shafts would be pivoted to plates inserted between the forked parts of the brackets E and held by the bolts D. The shaft B and its bearings may be placed below the splinter-bar, the shaft being actuated simply by the lever F as described, or by means of a rod passing through a tubular perch bolt and suitably connected to the hand-lever. A treadle may be substituted for the hand-lever.

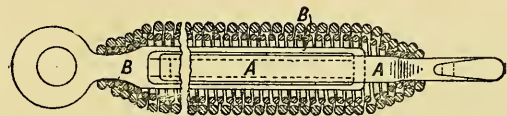
10,626. **Duckenfield, E.** Aug. 2.



Spur-carriers.—The Figure shows the application of the invention to the securing of skates to boots, but spurs may be secured in a similar way. A

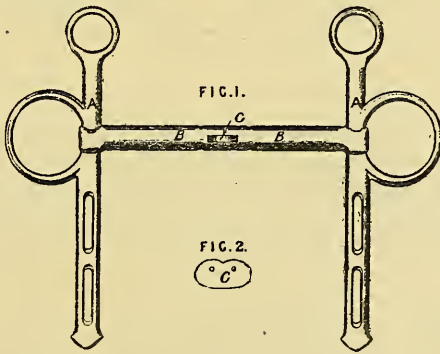
skate blade C is secured to the wood B at the heel by a bolt D having a slotted head *e* which enters a slot in the blade and is then turned through a quarter revolution to secure it ; the bolt is then fixed by two screws. The bolt has a T-shaped head *d*, and the skate is secured at the heel by inserting this head into a slot in a plate G on the face of the boot heel and turning the skate so that the head engages within the sides of the slotted plate. The front of the skate is secured as usual. The slotted plate G may be carried by a heel-plate A secured to the boot by an instep strap. The underside of the plate is preferably covered with india - rubber to prevent vibration. The T-shaped head *d* may be replaced by a screw to engage a nut fixed in the heel-plate. Spurs are attached to similar detachable heel-plates by side and central arms which are fixed by screws to the sides and face respectively.

10,927. **Ahlin, J. A.** Aug. 9. *Amended.*



Fastening traces, spring attachments for. Helical springs are interposed between the traces or harness and the vehicle to prevent jerks, and to facilitate the starting and drawing of the vehicle over rough roads. The springs are coiled in opposite directions, the ends being secured to links A, B, which are forked so as to slide longitudinally, one link guiding the other. The eyes and draught-hooks may be of any suitable shape, and may be made in one piece with the links or connected to them by bolts &c.

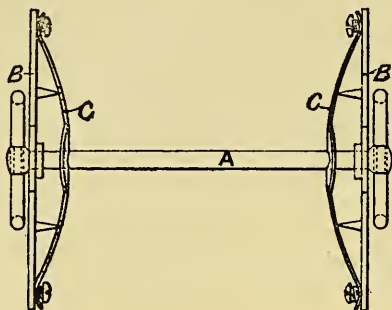
11,030. **MacMahon, C.** Aug. 12.



Bits.—The mouth-bar B, either solid or tubular, has a joint in the middle formed by a plate C, Figs. 1 and 2, through which two rivets pass in an eccentric position. This joint, which allows the

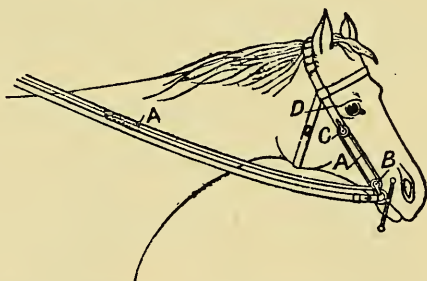
mouth-bar to hinge in only one direction, enables the bit to be used as a snaffle with a degree of severity, which may be varied by turning the cheeks A, A, or as a "Pelham" or a curb bit. The bit may be stamped from steel, aluminium, or other metal.

11,087. Kennedy, W. Aug. 13.



Bits; bridles.—To the ends of the bit A or to the lower part of the bridle are fixed or attached plates B carrying fixed spikes projecting towards the animal's cheeks. Spring plates C, with holes through which the spikes may protrude, prevent the accidental pricking of the horse's cheeks, but allow their action when the animal holds the bit unevenly.

11,088. Kennedy, W. Aug. 13.



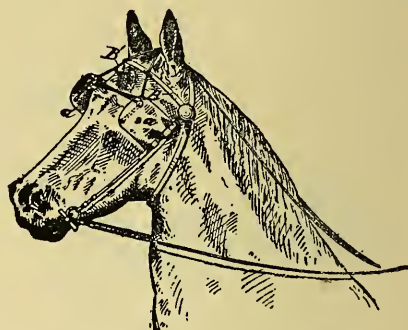
Bridles.—Relates to gag snaffle bridles. An additional rein A passes through a pulley or ring B in or connected to the bit, and also through a pulley &c. C secured to the upper part of the cheek strap D, or to a separate strap passing over the head.

11,206. Adams, C. H. Aug. 16.

Bridles, blinkers for. The blinkers a, a are drawn together by the rider or driver by means of a single or double cord B, B¹ passing over suitable pulleys.

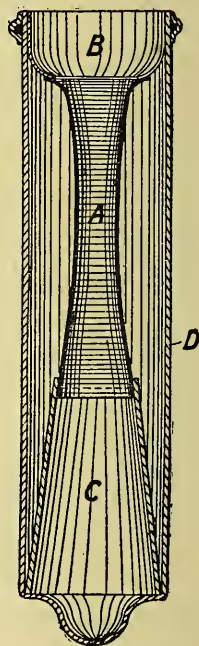
(For Drawing see next column.)

11,206.



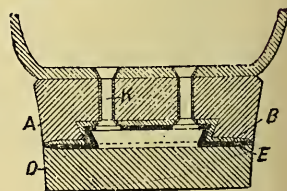
11,288. Jeffries, E. Aug. 18.

Whip sockets.—The throat piece A is formed of elastic webbing &c. contracted in the middle and stitched to the leather &c. mouthpiece B and the conical piece C secured within the usual socket D.



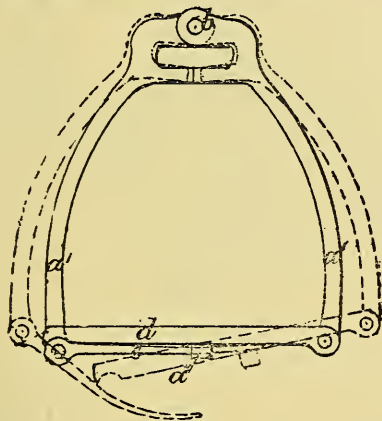
11,618. Tilley, J. B. Aug. 26.

Spur-carriers.—Relates to a detachable heel for boots &c. which may be used to carry spurs. The rear of the sole or a partial heel A thereon carries a metal plate B, in which is a dovetailed recess; the heel D carries a plate E with a corresponding projection and is secured by sliding this into the recess and by a screw inserted horizontally through a bar which



closes one end of the recess. The recess and projection may taper from the open end; the plates may be placed so that the screw is inserted at the front or the back of the heel. The plates may extend to the edge of the heel, as shown, being then preferably thinner at the edges and milled ornamentally; or they may be smaller and surrounded with leather. Openings K may extend between a cavity in the plate E and the interior of the boot, for ventilation. The outer portion may be provided with a metal or india-rubber covering to prevent wear or slipping; various heels may be applied to the same boot as required. The heel may be made from leather, gutta-percha, india-rubber, paper pulp, wood, or other material. The plates may have more than one recess and projection and their forms may be modified. India-rubber or other elastic packing may be used in the heel.

11,684. Harrison, J. Aug. 29.

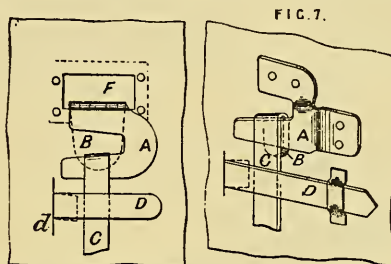


Stirrups, safety. The box is hinged at the top *b* and the tread *d* is hinged at one end to one leg *a¹*, and rests at the other end on the hinge of a spring pin *c*, which is hinged to the other leg *a¹* and passes through a loop *d¹* on the tread *d*. If the rider falls the legs *a*, *a¹* are pressed apart, causing the pin *c* to leave the loop *d¹* and free the tread, as shown by dotted lines.

11,934. Douglas-Hamilton, A. Sept. 2.

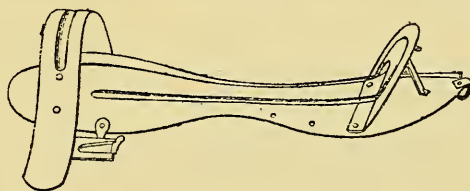
Stirrup straps, suspending, safety saddle-bars for. The first Figure shows one form of the invention. The stirrup leather C is looped over the bars A, to which is hinged a tongue B, fitting into a slot F, in the saddle or a plate attached thereto. The tongue may be of stiff leather or metal and be either hinged or flexibly connected. A strap D of leather, gutta-percha, or metal, &c., fixed at *d* and provided at its other end with a projection to fit into the saddle, prevents the stirrup strap from becoming detached too freely. This strap D may be dispensed with and be replaced by a knob on the saddle flap fitting

into a depression on or simply fitting against the saddle. Fig. 7 shows a second form of the invention. The stirrup leather C in this case is



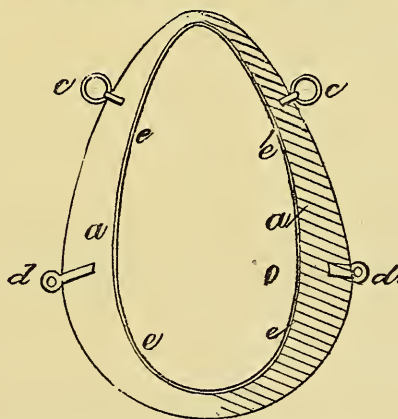
made with a flap B to pass over the saddle-bar A. The strap D may be attached as shown or in any similar manner. The additional strap D may be used with any form of saddle-bar.

12,997. MacMahon, C. Sept. 26.



Saddles.—A steel saddle-tree is constructed in four sections riveted together. A damaged section may be separately replaced.

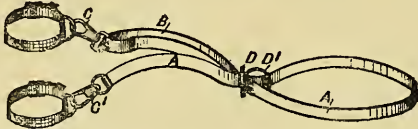
13,138. Loads, H. W. Sept. 28.



Collars, neck. The front *a* is made of metal, blocked or otherwise shaped from a sheet, or cast to form, as shown, having a strengthening-bead *e* around its inner edge. It may consist of a single plate or of two plates riveted, hinged, &c. together. When hinged, a suitable lock connects the other

ends of the collar. To this front, draught eyes *d* and rein rings *c* are fixed, and a flexible air pad or pad of solid india-rubber or mixture of cork, elastic glue, and cement is secured at the back, there being also a suitable leather or other covering. No hames are required. The metal front may be used as a foundation plate and covered with leather &c.

13,278. Clarke, W. R. Sept. 30.

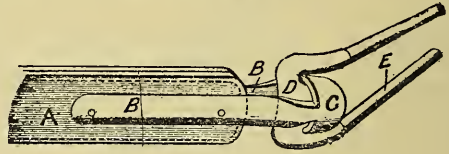


Dog couples and leaders.—Consists of a strap A with a loop B for the hand at one end, and carrying at both ends the swivel spring hooks C, C', and at equal distances from both ends the rings D, D'. The Figure shows the device arranged as a couple; to form a lead the hook C is pulled through the ring D.

13,341. Franklin, F. M., and Ryersee, J. G. Oct. 3.

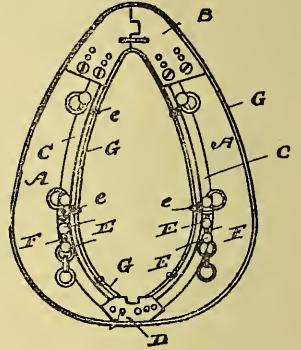
Fastening or coupling traces to hames. The trace A is riveted to the arms B, formed at the ends with a specially-shaped socket C, into which

a similarly-shaped boss of the piece D fits. This piece is formed with arms E, which are passed through and riveted to the hames.



13,425. Block, C. Oct. 4.

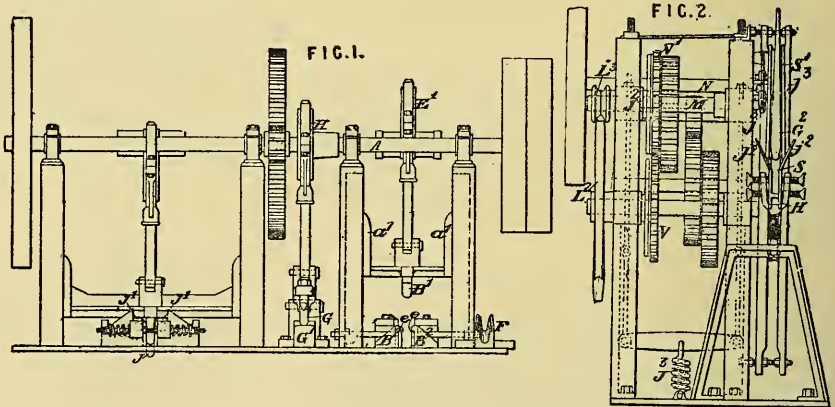
Collars, neck. The upper ends of the wooden sides A, A are adjustably connected by bolts to the cap B, hinged in the middle as shown. Similarly the lower ends of the sides are adjustably connected to a plate D. The eyes E, carrying rings and draught-bars F, are screwed through a metal strip C into the wooden sides. A sweat pad G, lying behind and of the same shape as the collar, may be attached by eyes *e, e*.



13,597. Parkes, J., and Gnosill, F., [trading as Parkes & Gnosill]. Oct. 7.

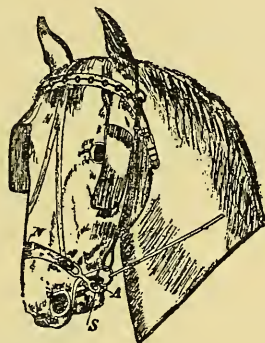
Collars, neck. Relates to hame-making machinery. The class of hames to be manufactured includes those called full-cased and half-cased hames. Two distinct machines are used. Full-cased hames are made as follows:—The metal blank to form the casing is first shaped by the machine shown in Fig. 1, and then closed around the wood by the machine shown in Fig. 2.

Referring to Fig. 1, the heated blank is laid upon the adjustable pieces B¹, B² and pressed down between them by the piece B¹, which extends to the rear of the machine and is reciprocated in its guides *a*¹, *a*¹ by the eccentric E¹ on a shaft running parallel to the main shaft A and geared thereto as shown. The pieces B², B² are preferably formed with overhanging ledges *e, e*, and the bed is slotted so that the grooved blank may drop freely from the machine. The blank is next heated along its upper end, and the top is closed up with a hammer in the usual way. It is now laid against suitable gauges upon a curved block F, and bent longitudinally at its upper end by hand. If desired, and when of steel or good iron, the blank may be grooved and curved at one operation by



suitably altering the shape of the tools B¹, B², B³, the top being closed up afterwards. The lower end of the blank is next re-heated and bent longitudinally by a succession of blows between the curved tools G, G¹. The upper tool G is worked by the eccentric H on the main shaft A. The lower tool G¹ has an opening in the bottom for removing the scale broken off. The lower curved end is now pressed between the spring rollers J¹, J² by the curved tool J, reciprocated like the tool B¹. This removes any puckers left by the tools G, G¹. The cap is next "plugged" and punched in the usual way, and is then ready for closing up around the wood. This is effected by the second machine. The larger or lower end of the casing G², Fig. 2, with the wooden part of the hame within it, is passed between the grooved rolls S, S¹, geared together by the wheel V, V¹, connected to the main shaft N by a speed-reducing train of gearing. The pressure between the rolls is obtained by the spring J³, drawing down the bearing blocks for the shaft M of the roll S¹. The hame being curved, a point on the rim of the loose roll S¹ does not travel so far as a point on the fixed roll S, and special means of bringing the roll S¹ back to its original position after each operation are employed. Parallel guide-plates j², j³ are arranged before and behind the rolls to prevent the hames from twisting. To give a better finish to the hames they are now passed between the fixed roll L² and loose roll L³. Half-cased hames are made in substantially the same way, the grooves in the rolls S, S¹ being modified, and interchangeable rolls being required to suit the right and left hand hames respectively. The passage through the rolls L², L³ is omitted.

13,958. Crocker, E. K. Oct. 14.



Bits; bridles.—
The nose-band N is connected by metal pieces S to the snaffle A.

13,963. Lake, H. H., [Moore, G. W.]
Oct. 14.

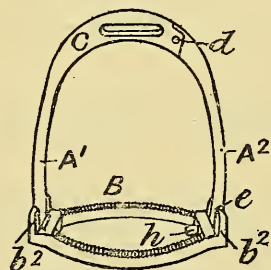
Fastening straps, buckle attachments for. The buckle is constructed with the tongue bent to form an attachment hook. The Figure shows a perspective view of the buckle engaged with a strap; 1 is the frame, 2 the divided bail, and 3 is the tongue pivoted at 4 and bent outwardly to form a hook before passing along the frame.



14,106. Wincer, F. H. Oct. 18.

Stirrups, safety.

The Figure shows one form of stirrup. The leg A² is neatly hinged at d to the bow C and fits at e into the tread B, which is hinged at b² to the other leg A¹. The catch at e is preferably formed thus:—The end of the leg A² fits into

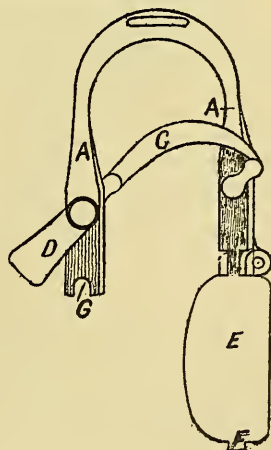


a vertical groove in the tread and carries a spring pin h to fit into a hole therein, and the leg A² is formed with transverse projections or notches to fit against notches or projections respectively at the end of the tread. The leg A² may be hinged at the other side of the eye, or there may be a hinge on each side of the eye. Again, the catch may be at d and the tread hinged at both ends to the legs. Lastly, a catch may be formed at both ends of the tread.

14,567. Stokes, C. Oct. 26.

Stirrups, safety.

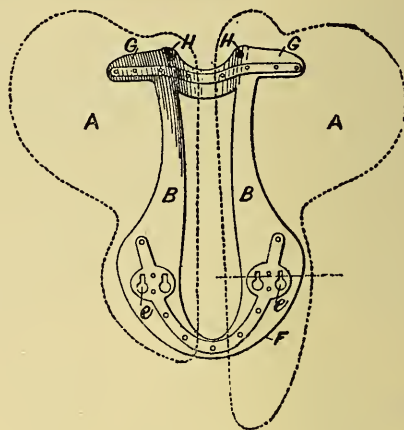
The Figure shows the position the parts occupy after the rider's foot has been released. The tread E is hinged at one end to the outer bow A, and has a pin F at its other end to fit into a slot G in the other leg of the outer bow. This pin F is kept in the slot G by a hook-like flange on



the plate D, which is pivoted to the outer bow A and firmly connected to the pivoted inner bow C.

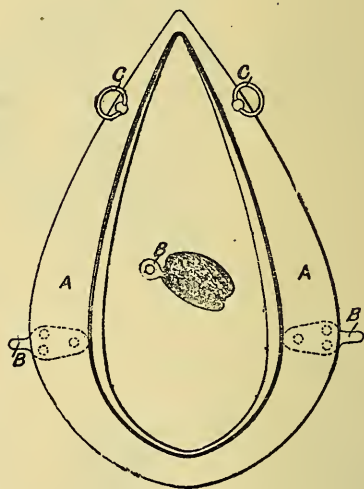
14,898. Page-Nash, W. H. Nov. 1.

Saddles.—Relates to convertible riding and military saddles. The Figure shows the saddle-tree B with the two different panels A for the two uses of the saddle dotted in. Panels such as that shown on the right are used for the military saddle, and such as that on the left for the ordinary riding saddle. Metal plates are attached at each end of the panels, the front plate having a shoe or staple to fit over the point G of the pommel and a hole to receive the screw H, and the rear plate having bolts for taking into the key-hole slots *e* in the metal strip strengthening the cantle F.



15,076. Frost, H., and Salkeld, S. Nov. 5.

Collars, neck. The front of the collar A is made of sheet metal to which the trace rings B and rein rings C are attached as shown, hames being thus dispensed with. The back is of leather and the whole is padded in the usual way. The leather is attached to the front by bending the metal over or by perforating it so that the leather may be stitched to it. The front may be also covered with leather with just sufficient padding to hide the attachment of the trace hooks. The collar may further be hinged either at the top or the bottom, suitable catches being provided.



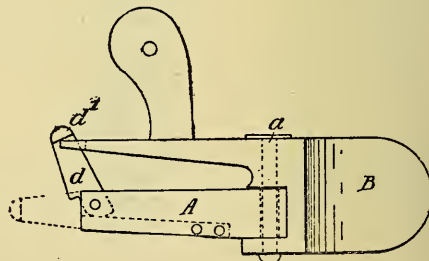
15,294. Ogden, S. Nov. 9.

Traces.—Relates to means for rendering woven bands more durable and suitable for traces &c. The band is first treated with a waxy composition, then with a siccative compound, and lastly with an enamelling-mixture consisting of Prussian blue and raw linseed oil. The second and third stages, or the third alone, may be omitted.

15,370. Williams, J. Nov. 10.

Stirrup straps, suspending, safety saddle-bars for. The Figure shows one form of the saddle-bar, which is arranged to facilitate the attachment of the stirrup strap as well as for safety. The bar A,

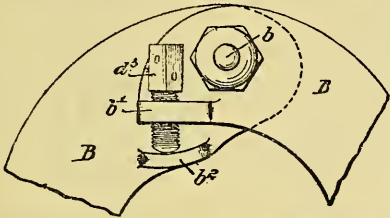
from which the stirrup strap is suspended, is hinged by the pin *a* to the part B fixed to the saddle-tree.



To the free end of the bar A is hinged the spring catch *d*, the end *d'* of which is shaped to fit on

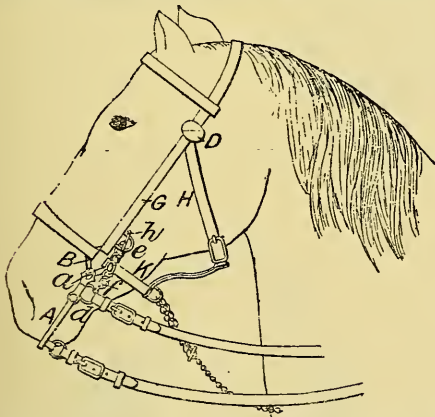
the horizontal arm of the part B. The parts A and B may be hinged loosely, or the pin *a* may be slightly inclined so that the bar A may take a downward position when the catch *d* has been released. In a modification, the catch is dispensed with and a flat spring is arranged to hold the bar A either in the position shown or at right-angles thereto.

15,559. Stewart, H. R. Nov. 14.



Pack-saddles.—Relates to pack-saddles of the form described in Specification No. 8081, A.D. 1887. The arms B, connecting the front and rear ends of the side bars of the pack-saddle, are connected by a bolt *b*, which may be assisted by other screws, as shown in the previous Specification. To prevent the arms B from spreading apart a screw *d*³, passing through the part *b*¹, is made to bear against the part *b*² on the other arm.

15,787. Thouvenin, F. A. Nov. 17.

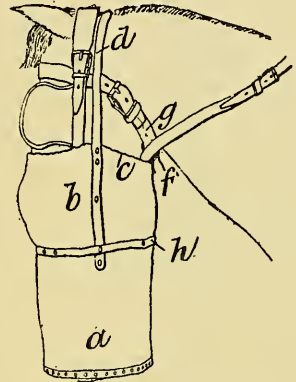


Bridles; halters; bits; martingales.—The head-gear may be used as a curb bridle, snaffle-bridle, halter, or stall collar, and is especially for cavalry and hunting use, although it may be used for driving also. The neck strap for picketing purposes may be dispensed with, and a separate watering-bridle is unnecessary. The curb A is attached in such a way that the mouth-bar is held evenly and champing the bit is facilitated. It is attached to the ring B by an obliquely-placed button *a*, or it may be hooked to the ring B. The ring *d* of the snaffle is connected to the loop *e* by the chain *f* and bar *h* as shown. The chain martingale is attached

to the chin-strap K by passing the cross-bar at its end through one of its links. The ornaments D are employed to hold together the cheek straps G and throat lash H. Brass keepers consisting of a round plate with staples at the back may be used for adjusting the various straps.

16,344. Champion, J. B. Nov. 28.

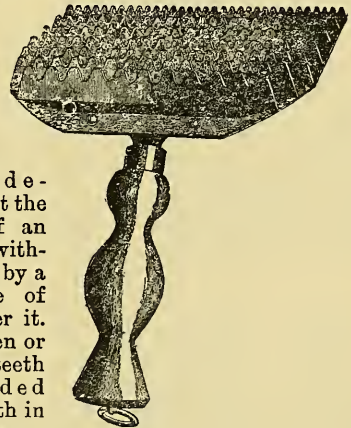
Nosebags.—The bag consists of a closely-woven lower part *a*, which contains the food, and is held open by the metal ring *h* and a loosely-woven upper part *b*, reaching a considerable distance upwards as shown and cut away at *c* so as not to interfere with the throat. The bag is attached by a strap *d* passing over the head and a short strap *f* buckled to the throat-latch *g*.



16,540. Stewart, H. R. Dec. 1.

Saddles; pack-saddles; stuffing-materials.—The panels or other stuffed parts of pack and other saddles are stuffed with cork cuttings, the principal object being to assist the animal in crossing water-courses &c. The covering is of leather or canvas &c., preferably waterproofed.

16,568. Gamble, W. Dec. 2.



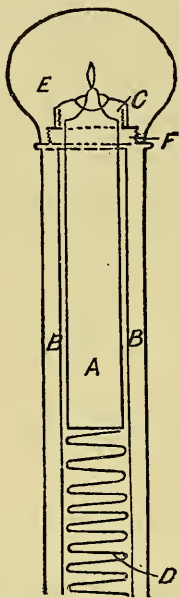
Currycombs designed to effect the cleaning of an animal's coat without irritation by a single passage of the comb over it. There are seven or more rows of teeth with rounded points, the teeth in the back rows, or those furthest from the handle, being smaller and more numerous than those in front. The teeth in one row are also out of line with those in the next, as shown.

16,664. Arnold, J. Dec. 3. *Drawings to Specification.*

Hobbles.—Consists in constructing hobbles of woven hair.

17,270. Biggs, F. J. Dec. 15.

Whips combined with other articles, the invention being described with reference to umbrellas and walking-sticks &c. A candle A is placed in the hollow stick B or in a tube fitted therein, and is pressed against a screwed perforated cap C by a spring D. The handle or knob E may be screwed to the stick or candle tube, or it may be hinged to serve as a reflector. A collar to hold a chimney, globe, shade, &c. of glass, mica, or other material may be screwed upon the threaded portion F. The stick may be divided by a partition so that candles may be stored in the lower portion of the stick. The ferrule may be detachable and serve as a receptacle for matches, which can be struck upon the roughened exterior of the ferrule.



17,360. Stidder, J. G. Dec. 17.

Whip-hanging devices.—Relates to apparatus for hanging carriage whips when not in use in such a way that the shape of the thong is retained. The neck of the whip y is held between two dished plates, the upper of which m may be separated from the lower g by a cord hanging from the pulley k. The lower plate is fixed to a board a. The lash is held by a fork w and the stock by a spring catch v, which, like the fork w, is fixed to a board d. The upper board a is hung from a nail by an eye f, and the distance of the lower board from it may be adjusted by the screw c clamping the tube b and rod e, or the boards a and d may be nailed to a wall at a fixed distance apart, or they may be replaced by a single long board.

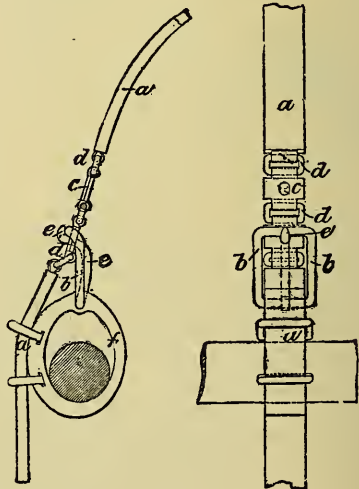


17,431. Wish, L. F., and Ellis, C. Dec. 19.

Backbands; fastening, buckle attachments for. The buckle attached to the ring f is formed with a frame b bent backwards at its front. The tongue e is bent to form a hook gripping the front bar of the frame, and is also arranged to allow a straight pull on the backband. The backband a is divided, the parts being connected by a chain of links d and perforated flat plates c, through one of which when secured the tongue e of the buckle passes.

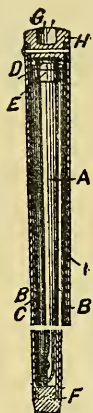
17,557. Starley, J. Dec. 21.

Saddles; stuffing-materials.—Relates to a method of padding saddles, seats, &c. The padding-material consists of shots, seeds, or like spherical substances used either alone or with large or small particles of other substances. Cushions may be cross-stitched to prevent too great a displacement of the materials, or they may be formed of long sleeves suitably filled.

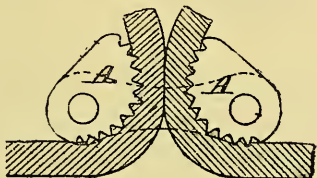


17,815. Godward,
O. Dec. 27.

Whips convertible into walking-sticks. The whip stock A is retained in a taper metal stick B, provided with a covering C, and when required for use is drawn partly out and secured by means of a leather &c. piece D and ferrule E secured by a screw to the stock A jamming inside the narrow end of the tube B. The ferrule F is made of india-rubber and can be held in a socket G in the detachable handle H.

**18,042. Pirnie, G.** Oct. 17, [date claimed under Sec. 103 of Patents &c. Act, A.D. 1883].

Whips.—Relates to the application of eelskin to carriage whips having covered haudles. The eelskin is preferably treated as follows:—It is first dried while stretched flat, and when wanted is cut into strips about an inch wide and soaked till flexible; it is then wrapped round the core of the whip. No cement is necessary, as the skin shrinks very considerably. The skin, being thin, reduces the bulk of the whip, and being oily excludes damp. The Figure shows part of a "straight whip." Round the core A of rattan or other suitable material is wrapped a strip B of the eelskin, and outside this is the woven or plaited covering C ending in a loop D to which the snapper E is attached. The invention may also be applied to "drop top whips." The eelskin may be used in any other way as a wrapping or covering of whips.

**18,038. Uhlenhuth, H.** Oct. 26, [date claimed under Sec. 103 of Patents &c. Act, A.D. 1883].

Fastening straps, couplings for. The fastening consists of two eccentrics A, A, coupled by one or more links, which grip the strap ends as shown.

A.D. 1888.

27. Stewart, H. R. Jan. 2.

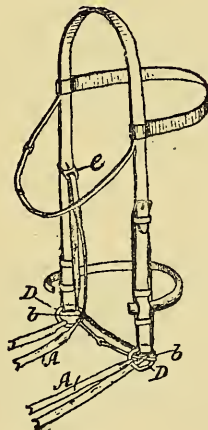
Bridles.—The object is to restrain the animal by drawing the bit into the corners of its mouth. A pair of reins A pass upwards through the bit-rings b to loops or pulleys e on the cheek-straps and then downwards to the rein-rings D, where they may be fastened or through which they may be returned to the loops.

(For Drawing see next column.)

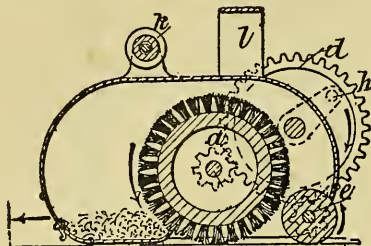
140. Schreiter, B. F., and Hiekel, F. A.
Jan. 4.

Brushing - apparatus for cleaning animals.—Relates to apparatus for cleaning horses and

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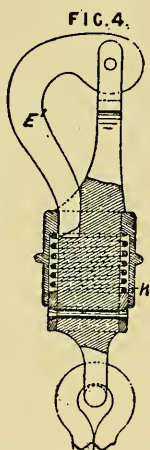
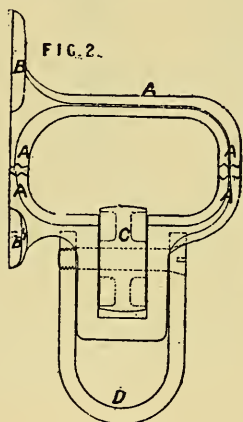


cattle. The brush roller *a* and rubber roller *e* are turned from the wheel *d* by toothed or other gearing; a door is provided through which the dust



is removed from the casing. The operator uses the machine by placing one hand under the strap *l* on to the roller *k*, whilst with the other he turns the crank *h*.

219. **Bray, G.** Jan. 5.

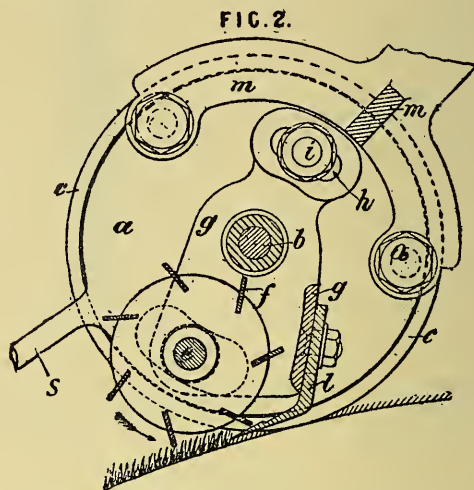


Tugs, shaft; fastening traces and pole-chains, slip-hooks for. The improvements are especially for use with gun-carriages, fire-engines, &c. where rapidity of coupling and uncoupling is desired. The shaft tug, as shown in Fig. 2, consists of a solid metal casting *A* formed with lugs *B*, *B'* for attachment to the backband, and with a hinged loop *D* for the breeching. There may be a bottom roller *C*, and also side rollers to diminish friction. In the slip-hook, the pivoted tongue *E*, Fig. 4, is held by a spring sleeve *K*.

290. **Fuller, J. F.** Jan. 7.

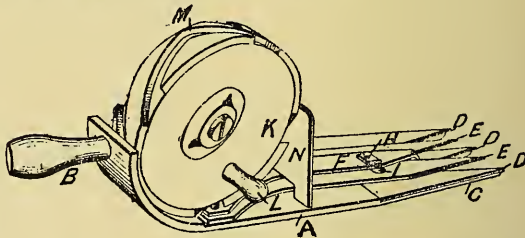
Horse clippers and the like.—The machine, of which a section is shown, acts like a lawn-mower. Two circular side plates *a*, connected by a bridge *m* with handle &c. to a central sleeve, are mounted on a shaft *b*, which ends in two annular toothed wheels *c*. On the bosses of the side plates a yoke *g* is mounted carrying a fixed cutter *l* and a rotary cutter with screw blades *f*. The shaft *e*

of the rotary cutter passes through slots in the side plates and terminates in pinions, which gear with the annular wheels *c*. The fixed cutter *l* is adjustable for wear of the rotary cutter. The



yoke *g* is secured to the side plates by screws *i* through slots *h* which allow adjustment of the cut. Arms *s* projecting from the side plates carry a brush which roughs up the hair before the cutters. The exterior of the wheels *c* is roughened or coated with card clothing. In a modification, the annular wheels are replaced by spur-wheels, in which case the fixed comb precedes the rotary.

684. **Banner, J. W.** Jan. 16.

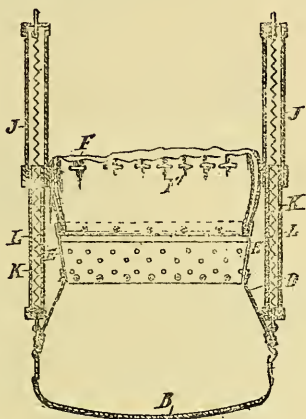


Horse clippers and the like.—A base-plate *A*, curved upwards behind and carrying a handle *B*, is reduced in thickness in front, and is cut into three teeth *C*. These teeth are covered by a toothed cutter *D* mortised into the thicker part of the base-plate and lying flush with it. A second cutter *E* with two teeth is oscillated about a centre at the rear of the base-plate. A lever *F* pivoted upon a pin *H*, which projects from the base-plate through a slot *I* in the moving cutter, is hooked to the cutter and imparts the oscillatory motion. The lever is worked by a cam-wheel *K* mounted in the rear and turned by a handle *L*. The cam acts by means of a succession of curved grooves *M*, which terminate alternately on opposite sides. The lever has two pins which are alternately

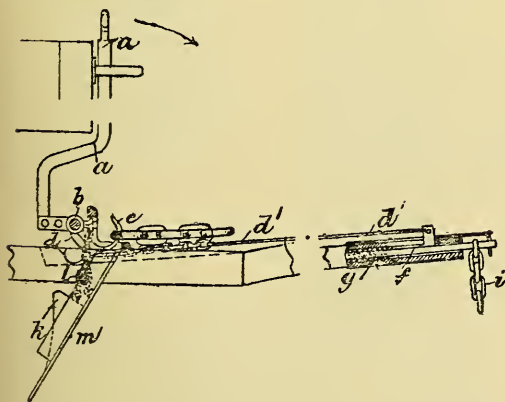
engaged by successive grooves, so that the cutter is reciprocated between the centre and sides. In front of the cam is a stop-plate N to prevent the hair from clogging the apparatus.

694. Willigerod, E., and Neresheimer, L.
Jan. 17.

Nosebags.—The nosebag consists of a dish-shaped base B, preferably perforated, connected by a canvas &c. band D to a perforated metal or leather band E, to the top of which is secured the canvas top F provided with an inner fold F' having a cord by which it may be drawn together to close the bag. Telescoping tubes J, K are attached respectively to the parts F and B, and contain spiral springs L which draw up the base B around the band E as the food is consumed. If desired, the part B may be smaller in circumference than the part E, and be drawn into instead of around it. By these improvements the food is kept up to the horse's mouth as consumed, ventilation is ensured, dust &c. is sifted through the holes in the bottom B, and loss of food by tossing is prevented.



751. Rieger, F. Jan. 17.



Runaway horses, releasing; fastening traces &c. By this invention, the driver of a wagon or other road vehicle can unhitch runaway horses and apply the brakes by a single movement of a lever. In

the Figure, the hand-lever *a* is mounted on a cross-shaft *b* carrying the trace hooks *c* and a central hook *d*, which is connected by a chain and rod *d'* to a sliding bolt *f* at the front of the pole. When the cross-shaft is rotated, the trace hooks pass through vertical slots in the swingle-tree and release the traces, the sliding bolt *f* at the same time being drawn in against a spring *g*, thus releasing the breeching-chains *i*. The brake block or skid *k* is hung by a chain *l* which passes over a projection on the cross-shaft, and on being released by the rotation of the shaft is guided down in front of the wheels by guides *m*. In another arrangement, the traces are secured by transverse sliding bolts pivoted to a disc which is mounted on a vertical shaft within reach of the driver.

1261. Wood, A. M. Jan. 27.

Horse-boots are made of any form from some compound containing rubber, gutta-percha, &c., preferably that compound described in Specification No. 967, A.D. 1888. They are either moulded entire of this compound or the upper part and sole, roughened if desired, are made separately and attached. The boot is attached by straps &c. as usual.

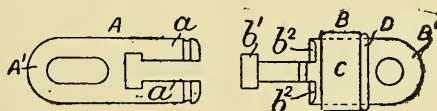
1281. Clark, A. M., [Dax, J.] Jan. 27.

Bridles; halters; collars; breeching; saddles; bellybands.—These parts of harness are made mainly of metal chain bands of any kind or size, which may be varnished.



Fastening collars. The fastening shown in section in the Figure consists of tubes fitting one within another and secured by spring catches engaging a series of holes to enable the size of the collar to be adjusted. The catches are released by pressing studs on the outside of the collar.

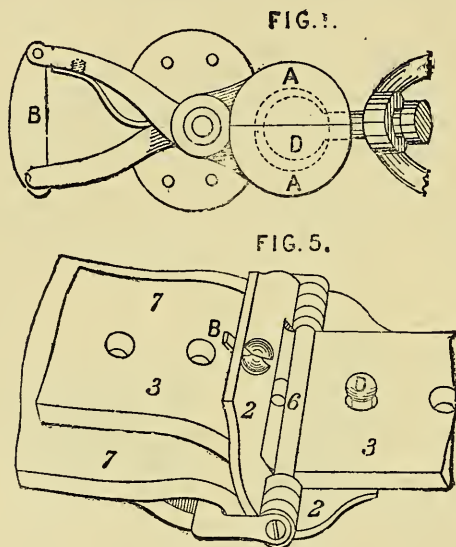
1292. Wilson, A., and Chittenden, N. W.
Jan. 28.



Fastening pole-chains, traces, &c., couplings for. The coupling is more especially for use where it is required to disengage straps or chains while under considerable strain, such as the pole-chains and traces of harness, the chains of cranes, &c. The coupling consists of two parts A, B, which are shaped to interlock, and are held together by a

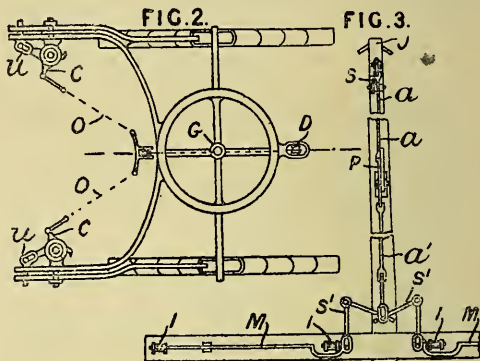
sleeve C which is kept from accidentally shaking back by a rubber ring D fitting in grooves in the arms a, a' , or by suitably-disposed springs, and is kept from dropping off the end b' when the coupling is unfastened by forming the end sufficiently wide. The shoulders b^2 of the part B are formed with edges to fit into grooves in the ends of the arms a, a' , or these parts may fit together by pins entering corresponding holes. The parts A, B, when used for coupling chains, are preferably shaped with links A^1, B^1 as shown; when used for straps they may be made with a tang or cross-bar.

1441. Grünbaum, H. O. A. E. Jan. 31.



Fastening tugs, girths, collar chains, &c., couplings for. The coupling consists essentially of a ball D embraced by two hollow hemispherical pieces A, A, hinged together somewhat like a bullet mould. In Fig. 1, the ball D is shown attached to a link and the hinge of the pieces A, A to a plate, which is to be riveted to the other part to be connect d. The arms of the pieces A, A are connected by a catch B. In a modification, the hinge pin is made to serve also as the pin of a shackle. In another form, an attaching-plate, enlarged to protect the arms, is fixed at each end of the hinge pin. Fig. 5 shows another form for connecting straps. The ball is fixed by its stem to one part of a hinge 2, the hollow hemispherical pieces with their catch B being pivoted to the other part of the hinge 2. After passing the ball D through a hole in the strap 3 the hinge 2 is folded upon its pin 6 till the ball D is grasped by the corresponding hollow pieces.

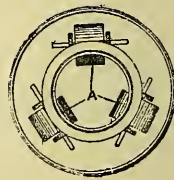
1516. Maury, T., and Roubinet, E. Feb. 1.



Runaway horses, releasing; fastening traces &c., draw-bolts for. Fig. 2 shows a plan of the apparatus as adapted to a vehicle for a single horse. The shafts (not shown) are attached to stays on the body by bolts u which are normally kept in place by springs in the centres or hubs of bell cranks C, but can be withdrawn by means of cords O attached to a single cord passing round pulleys G, D and attached to a hand-lever in front of the dash-board. Fig. 3 shows a plan of the apparatus as applied to a two-horse vehicle. The pole tap J is secured by a sliding bolt attached to a bell crank S actuated by a rod or cord a connected to a second bell crank P which is connected to the driver's lever and to which is also attached a rod or cord a' actuating bell cranks S', S' adapted to withdraw sliding bolts M, M from the trace connections I.

1965. Wright, W. Feb. 9.

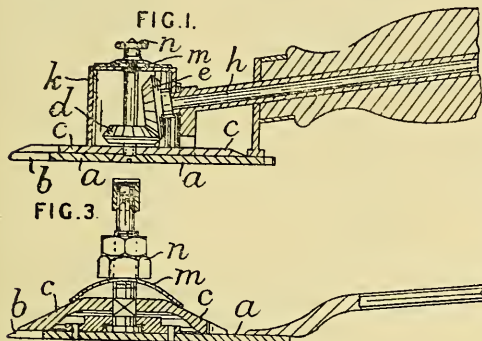
Whip sockets.—Wheels A of india-rubber or like material are mounted within the holder to grip the whip.



2095. Rose, F. Feb. 11.

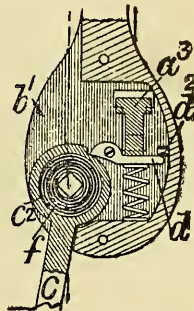
Horse clippers and the like.—The Figures show sectional elevations of two forms of instruments. A base-plate a attached to a handle is formed with a curved row of teeth b set at different angles, and over it rotates a cutter c with three or four large teeth or a greater number of small ones. In Fig. 3 the cutter spindle is mounted in a footstep secured upon the base-plate. The cutter is vaulted over the footstep and is pressed upon the base-plate by an

arched spring *m* beneath screws *n* on the spindle. In Fig. 1 the cutter is flat and is geared by bevels *d, e* with a spindle *h* running through the handle. A spring *m* at the top of the spindle presses down a

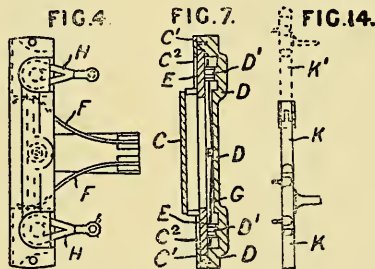


cover *k* and keeps the cutter against the base-plate. The handle and cutter spindle may be adjustable so as to put the cutter further forwards or backwards. Motion is transmitted from a fixed motor through flexible shafting attached, in the one case to the handle spindle and in the other to the cutter spindle.

shows a sectional side view of the hinge. The depending step or stirrup *C* is pivoted to the bottom of the sides of the ordinary stirrup, and is held in the open position shown against the tension of the spring *f*, by the catch *d*. The tread of the ordinary stirrup is provided with lugs *a*³ which project through the plate *b*¹ and press against the catch *d*. Thus, after mounting, the pressure on the stirrup releases the catch *d*, and the lower stirrup is turned by the spring *f* so as to coincide in position with the upper stirrup. The pressure of the tread on the upper stirrup is ultimately taken by flanges on the inner ends of the plates *b*¹.



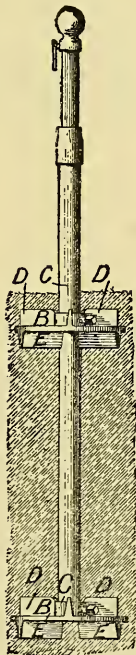
2728. Fletcher, W., and Bourne, W. J.
Feb. 23.



Runaway horses, releasing; fastening traces &c. Fig. 4 shows a plan of a fitting attached to the end of the pole, and Fig. 7 a sectional elevation of the same. The fitting consists of a dished lower part *C* having flanges *C*¹ screwed to an upper part *D* and having also holes *C*² covered by sliding plates *E*. The shackles *H*, Fig. 4, of the hame straps fit above the plates *E* and engage studs *D*¹ on the upper part *D* of the fitting. The plates *E* are normally kept in the position shown by springs *F*, but they can be pulled towards the centre of the fitting by means of an arrangement of cords actuated by rods under the control of the driver, and when they are so moved the shackles *H* are pressed down by springs *G*, and the hame straps are thus released. Similar fittings are attached to the splinter-bar for releasing the traces. Fig. 14 shows a splinter-bar *K* for a fire-engine which, instead of having the usual whipple-tree at each end, is provided with two hinged extensions *K*¹ which carry the releasing-appliances for the outer traces, while those for the inner traces are fitted to the splinter-bar itself.

2237. Logan, W. P.
Feb. 14.

Tethering animals.—Relates to anchor plates for hitching-posts. The anchor plate consists of a cast disc *B* having radial rigid wings *D, E* arranged on both faces and a hub *C* with a set-screw for securing to the post.

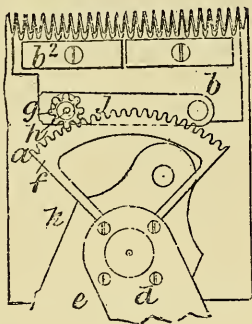


2275. Withers, S., [trading as Samuel Withers & Co.]. Feb. 15.

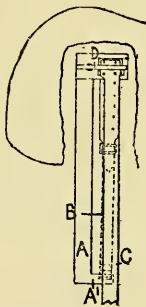
Stirrups.—Relates to means for providing a second step to assist in mounting. The Figure

2766. Wadkin, H., and Stroud, G. Feb. 24.

Horse clippers and the like.—Cutting is effected by a fixed comb *a* and a reciprocating one *b*, kept together by springs *b*². The cutter *a* is held by a fixed handle *e*. Motion is communicated to the cutter *b* from a pivoted handle *d* with a toothed sector *f*, which gears with a pinion *g*. An eccentric *h* attached to the pinion actuates the comb by a connecting-rod *j*. The instrument is provided with a cover and may be mounted on rollers.

**2800. Jensen, P.,** [*Isaacs, P. A.*]. Feb. 24.

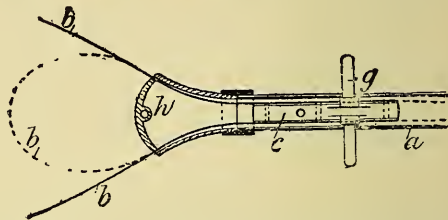
Stirrup straps, suspending.—Relates to means by which the stirrup may be lowered to enable the rider to mount. The Figure shows one form of the invention. The stirrup leather *C* is attached over the bar *D* of a special spring catch to an elastic band *B*, the end of which is fixed to the point *A*¹ of the bar *A*. By releasing the spring catch the stirrup may be drawn down by the stretching of the band *B*, which will cause it to spring back when the catch is again released. A cam fastening may be used in place of the spring catch. In another form, the stirrup leather is attached to a drum enclosing a spring which brings it back to its normal position.

**2898. Squier, F. W.** Feb. 27.

Fastening reins, straps, &c., buckle attachments for. A clip *A* is used to connect the buckle *C* to the bit or the bit ring *B*. This clip may be permanently secured either to the bit or buckle. The ordinary billets or loops upon the cheek straps or reins are thus dispensed with. The clip may be used for the strap suspending a wallet from a saddle and for other straps.

**2941. Bird, G. C.** Feb. 28.

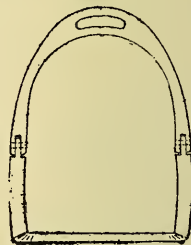
Halters, logs for. An india-rubber ring *c* is placed in a groove round the usual perforated wooden ball *a*, the object being to prevent noise and injury to the animal.

**3108. Moss, J. R.** March 1.

Lassos.—A dog or other animal is caught by passing a loop or steel band *b* over its head and contracting it upon its neck. The ends of the band are passed through slits in a piece *h* and are attached to a slide *c* fitted in a tube *a* and provided with a handle *g*. The slide is held in position by a spring catch engaging a rack inside the tube. A knife &c. is fitted to slide in a sheath at the side of the tube *a*, so that it can be projected to kill the animal when necessary. A handle of any desired length may be hinged or otherwise attached to the tube *a*.

3389. Scott, L. K. March 5.

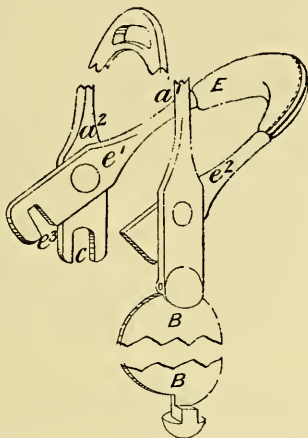
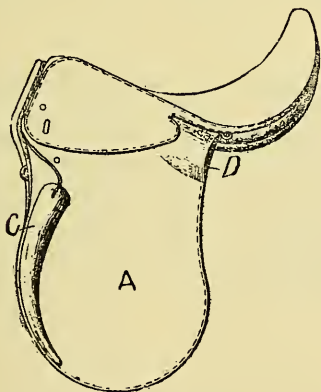
Stirrups.—A loose hinge is made in the middle of each leg for safety.

**3539. James, W.** March 7.

Fastening breeching, traces, &c. Consists of means for attaching buckles to dispense with sewing, combined with a spring hook or snap fastening to be used instead of hame tugs, breeching tugs, and trace end chains, &c. Any kind of buckle *A* may be combined with any kind of spring hook or fastening *B*. A particular form of spring hook is described in which a chamfered slide plate *C* protects the slot.

3572. Booker, W. March 8.

Stirrups, safety.
The tread B of the stirrup is hinged to the leg a^1 , preferably as shown, and its free end is shaped to fit into the slot c in the leg a^2 and the slot e^3 in the leg e^1 of the pivoted inner bow E. The leg e^2 of the inner bow may be extended beyond its pivot to form a stop. In the Provisional Specification, it is stated that the slot c may be dispensed with, and that an equivalent to the slot e^3 may be employed.

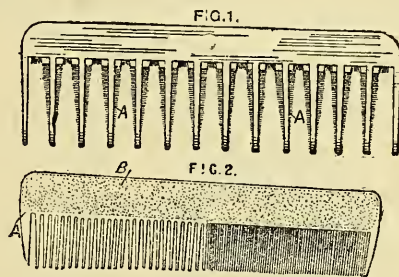
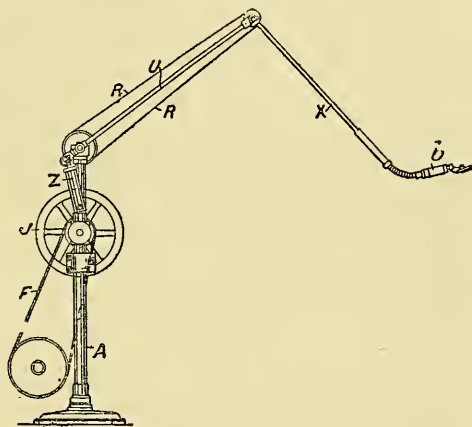
**4047. Leckie, W. G.** March 15.

Saddles.—The knee-pad C and thigh-pad D are made by forming protuberances in the flap A or a detached part of it by blocking or moulding, filling these protuberances with suitable padding, and stitching on a leather backing.

4196. Benstead, W. J. March 19.

Combs for dressing hair and skins, grooming animals, and similar purposes. Consists in inserting bristles, wire, whalebone, or other materials of which brushes are made, in the teeth of the comb as shown at A, Fig. 1, or the face of the comb as shown at B, Fig. 2.

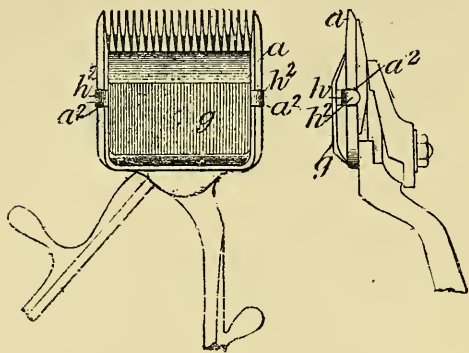
(For Drawings see next column.)

4196.**4293. Clark, W.** March 20.

Horse clippers and the like; animals, stocks for holding.—Comprises gearing for giving the clipper free and extensive movement while driving it from a fixed motor, and also an associated special clipper. A short horizontal shaft across a post A is driven from the motor F or turned by a hand-wheel J. A second horizontal shaft above is driven by bevel gearing from the first and can swivel about the top of the post. A rod U is pivoted upon it, and an endless band R communicates its motion to a spindle at the other end of the rod. A tube X is hinged to this spindle, and a slender shaft within it is driven by mitre gear. A short length of coiled flexible shafting completes the connections with the spindle in the clipper handle b . The rod U is counterbalanced by a spring piston in an oscillating cylinder Z. The mitre gear and flexible shafting at the opposite end of the tube X may be interchanged, or both may be replaced by universal joints. The handle b of the clipper terminates in a plate to the underside of which the fixed cutter is attached by three screws, the centre one forming the fulcrum of the lever which works the reciprocating cutter. Spring fingers adjustable by screws rise from the fixed cutter and arch over to the reciprocating one. The four legs of the sheep &c. are held in stocks consisting of a wooden frame having holes which open by means of hinged

pieces, the latter being held closed by spring catches. The sheep are laid on their side during shearing.

4343. Brown, C. March 21.



Horse clippers and the like.—Consists in providing changeable gauge plates or lifts *g* of varying depth in order to adapt one clipper for cutting hair of various lengths. Each gauge plate *g* is of sheet metal, shaped as shown, to cover the underside of the under cutting-plate *a* except its teeth, and has fixed to it a spring clip *h* with hooked ends *h²* which slip through notches *a²* in the edge of the lower cutter plate and secure the gauge plate in position under the latter. By changing the gauge plate for a deeper one the length to which the hair is cut is increased, and *vice versa*. Other suitable means for attaching the changeable gauge plates may be adopted.

4513. Cowley, J. March 24.

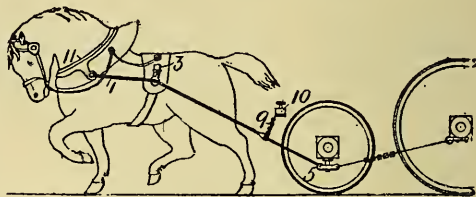
Fastening hames, couplings for. The kidney link for fastening the ends of hames, used especially in pair-horse harness, is made in the form shown. The slot *b* is for the martingale or breast strap, which is thus prevented from moving from side to side. The top side of the link is made flat at the back *c* and shaped at *d* to fit between the forewale and body of the collar. The link keeps the hames in proper position.



4530. Brigg, T. H. March 24.

Traces.—The trace 1 is attached at one end to the hame 11 as usual, is supported by a strap 3 from the saddle placed further back than usual, and is secured at the other end directly or indirectly to a point 5 considerably below its usual position, so that the trace forms an obtuse angle at the saddle. By this means when a heavy load is drawn pressure is brought to bear on the saddle so as to increase

the grip of the animal on the road. To prevent the animal from getting its legs over the trace



when resting, the trace may be drawn towards the splinter-bar 10 by an elastic support 9.

5041. McDonnell, W. April 5.



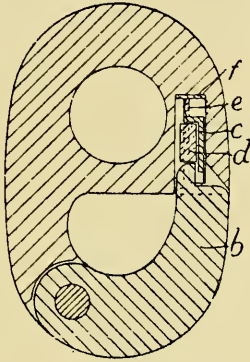
Manes, devices for arranging.—The mane is clipped between two or more plates or bars suitably connected at their ends, *e.g.*, by slots and screws with wing nuts or by a hinge. Several of these devices may be connected by chains as shown. These plates or bars may be of metal or wood suitably weighted, and may be lined with rubber &c. They may be flat or corrugated so as to crimp the mane, and may carry a curved plate to fit over the neck.

5155. Loads, H. W. April 6.

Collars, neck. Relates to air pads for horse collars. Four sheets or plates of suitable india-rubber compound are placed in the lower half of a hollow mould of horse-shoe shape, two above and two below with a small piece of wet fabric between. The edges of the rubber sections which project beyond the flange of the mould are now joined with the india-rubber solution, except at one point temporarily where a blowpipe is inserted to inflate the pad. This opening is afterwards sealed, and the upper half of the mould is tightly fixed on. The mould is then exposed in a steam chamber to steam at about 35 lbs. pressure, so as to harden and vulcanize the pad, the steam from the wet fabric within serving to keep it well distended. When cool the pad is removed and its flanges are trimmed off.

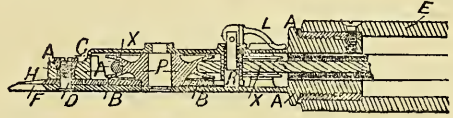
5410. Ruck, R. M. April 11.

Fastening, shackles or slip-hooks for. Relates to improvements on the invention described in Specification No. 3653, A.D. 1886. The point of the hinged tongue *b* is held by a spring catch *c*, the spring being formed of a rubber block *d* suitably held in place and urging the catch upwards. A key *e*, controlled by a plate of rubber *f*, enables the catch to be held in place either permanently or until the weight on the hook prevents the catch from returning.

**5635. Bariquand, L. F. J., Bariquand, E., and Marre, C. P. E.** April 16.

Horse clippers and the like.—The object is to drive reciprocating comb clippers from a fixed motor, and is attained either mechanically by an

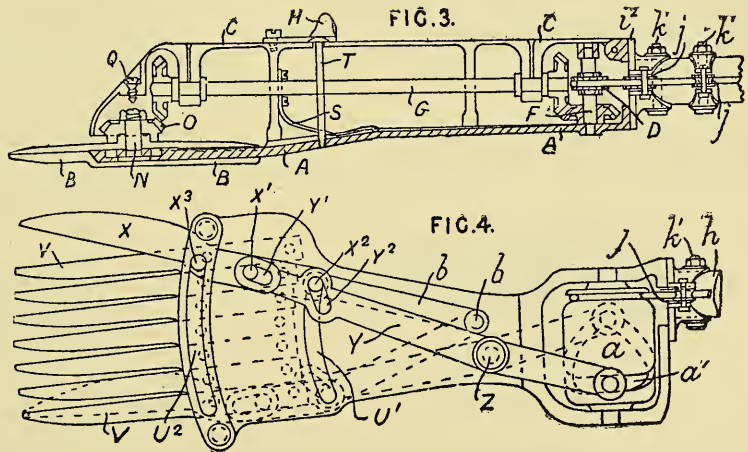
endless band or pneumatically. The Figure shows the former arrangement. The lower fixed comb *F* is attached to a casing *C* and kept in contact



with the upper movable comb *H* by a screw bolt *D* through a T-plate *A* at the front of the casing. The nut of the bolt is nicked for unscrewing, so that it need not project inconveniently. The casing is screwed into a hollow handle *E*. The upper comb is continued into a lever *B, B*, which is oscillated about a pin *R* by an eccentric on a pulley *P*. An endless band *X* driving this pulley and entering by the hollow handle is led from the motor through two flexible tubes enclosed by a third. The comb may be stopped by lifting the pin *R* with a lever *L*. Two cords and double levers may be substituted for the endless cord. When driving pneumatically, the movable comb is worked by a double piston in a cylinder to the opposite ends of which flexible tubes lead from a pump cylinder with piston reciprocated mechanically. Several of these cylinders may be mounted on a carriage when a number of clippers are to be used in the field.

6503. Richardson, T. L., and Dixon, R. May 1.

Horse clippers and the like.—Relates to sheep-shearing apparatus which has either a rotary or oscillating cutter working over a series of blades forming a comb, and is driven by an endless band conveyed along a flexible arm from a power shaft. In the rotary form, shown in Fig. 3, the blades *B* are attached separately to the fore-end of an under-plate *A* and their tips lie on the circumference of a semicircle. The cutter, of two or four blades, and a mitre-wheel *O*



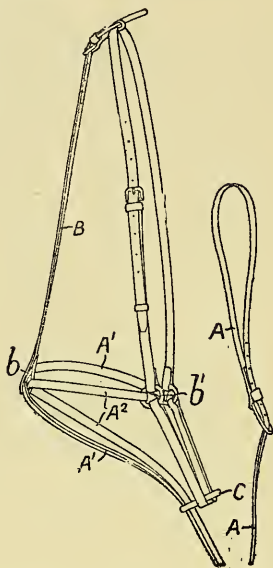
are keyed on a spindle *N* projecting from an undercutting in the plate *A*. An arched cover *C* extends over the under-plate *A* from an end-plate *i*, to which the plate is rigidly attached, but the cover is hinged. A transverse spindle *F* is pivoted in the rear of the under-plate and takes the driving-band on a pulley *D*. A spindle *G* runs inside the cover, and through the connection of terminal mitre gear conveys rotation to the cutter. For the purpose of putting the cutter in or out of gear, the cover and under-plate either are held close together by a latch *H* engaging a pin *T* or are separated slightly by a spring *S*. When in gear a screw *Q* presses upon the spindle *N* and keeps the cutter close upon the comb. In the reciprocating form, shown in Fig. 4, the oscillating blade *X*, which travels over the fixed blades *V*, has three pins *X*¹, *X*², *X*³, which are employed as follows:—*X*¹ and *X*² are engaged by slots *Y*¹, *Y*² in the working lever *Y* pivoted at *Z*; *X*² and *X*³ travel in curved slots *U*¹, *U*²; and *X*² is also jointed to a radius bar *b* centered at *b*. The lever *Y* is worked by a cam-groove *a*¹ on a cylinder *a* taking the endless band.

The groove has a circular part which gives the blade a rest between the cuts. The cam cylinder may be replaced by a disc cam engaging a bow at the end of the lever. The endless band is guided along the flexible arm *h* by bowls *j* on rings *k*¹.

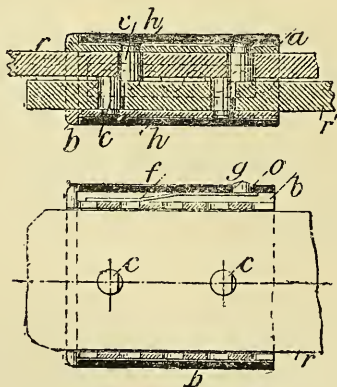
6555. Petrie, D. May 2.

Martingales.—

The martingale *A* is split at its upper end into two straps *A*¹, *A*², which pass in opposite directions through the loop *b* in the strap *B*, and are attached after encircling the nose to rings *b*¹, which are supported by cheek straps and which in turn support a ring *C* through which the martingale passes. If the animal tosses its head the ring *C* presses upon the lower jaw and so restrains the animal. The device may be operated by hand by dispensing with the strap *A* and continuing the straps *A*¹, *A*² through the ring *C* and through a ring on the breast-plate to form reins.



6823. Kromberg, C. May 8.



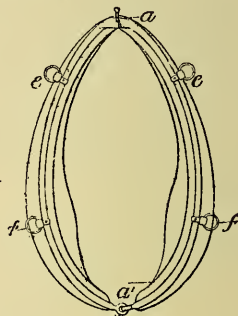
Fastening traces, straps, &c. The ends *r*, *r*¹ of the strap fit respectively in trough-shaped casings *a*, *b* which have serrated interlocking edges and are provided with pins *c*, *c* passing through the strap ends and abutting one against the other. These

casings are enclosed in a sheath *h*, which may be slid over them and is kept in place by a spring catch *f*, *g* entering a hole *o* in the sheath. A spring is also provided on the broad face of one of the casings.

7260. Broome, J. May 16.

Collars, neck.

The collar is provided with a hinge or coupling *a*¹ at the top or bottom and at the other end with a spring catch *a*. The coupling and catch are fixed either to the covering or padding of the collar by stitching, riveting, &c., or by rods which serve as hames and lie either within or outside the collar. The terret rings *e* and the tugs *f* are fixed to those rods when used, or to the hames in the usual manner.



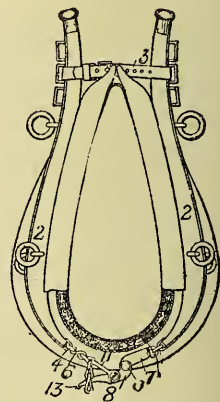
7476. Lysaght, G. J. May 19.

Whips.—The invention is shown applied to a walking-stick. A case 2 with compartments 3 for holding sundries is attached to the stick, and when rolled round the latter is secured by a strap 4 or a stud.



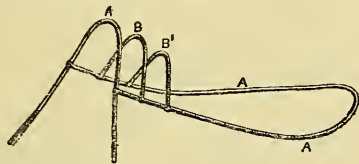
7665. Allison, H. J., [Vose, T. F.] May 25.

Fastening hames, couplings for. The hames 2, connected at the top by a strap 3, are formed with eyes 4 at their lower ends. A chain 6 is attached to one eye and a hook device to the other. The hook device consists of plates 7 and 8 hinged together at 0, the plate 8 carrying a hook 11 for the chain and being formed with a prolongation 13 to serve as a handle. The hook 11 is first hooked into a suitable link as shown, and the handle 13 is then pulled well round to the



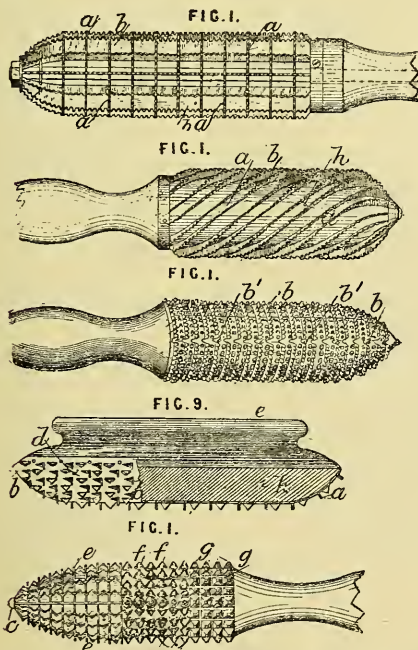
right, so that the pivot of the hook 11 lies above the hinge 9. The hanes are now securely and tightly fastened.

7779. Keen, A. W. McL. May 28.



Saddles.—The saddle tree is made entirely of metal. The part A, A is wrought or cast in rounded or flat form, welded, riveted, brazed, or otherwise joined or stamped out in one solid piece. Two strengthening gullet pieces B, B' are brazed or otherwise fixed to the part A, A. Panels are made from two cuttings of felt or spongeo-piline joined lengthwise down the middle.

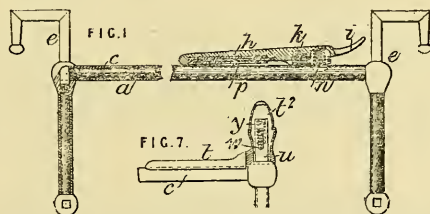
7968. Tipton, D. P. May 31.



Currycombs.—The toothed surface of the currycomb is of cylindrical or similar form, the ends being rounded off. By this means the comb adapts itself readily to otherwise awkwardly curved parts of the animal's body. There are five distinct forms. The first consists, as shown in the first Fig. 1, of longitudinal strips *b* and transverse plates *a* slotted so as to interlock. The plates *a* and strips *b* may have any convenient form of tooth, and the teeth may vary in different plates.

The plates may be open like wheels and may be threaded upon a longitudinal rod. They may be circular, oval, polygonal, D-shaped, &c. When D-shaped the teeth on the flat part may be omitted and a handle fixed to extend over this part of the plates. The plates may be suitably bent so that the teeth may project perpendicularly to the surface. Both ends of the cylindrical comb may be rounded, in which case a sliding tubular handle is provided. The second form consists, as shown in the second Fig. 1, of toothed strips *b* secured to a central core or former *a*. Each strip may have a single or a double row of teeth and may be fixed in a longitudinal or spiral manner as shown. Or a strip or length of wire may be bent in a zig-zag manner and secured in grooves. In the third form, as shown in the third Fig. 1, toothed rings or bands *b* are secured to a core forming part of the handle. Various forms of toothed strips to be bent into rings are shown and described, and, as in the second form, zig-zag strips or lengths of wire may be used. The rings may be circular or elliptical, polygonal, D-shaped, &c. The core may be variously shaped for these strips, and these may be secured by tucks or by interlocking projections *b'* &c. The fourth form, as in Fig. 9, consists of a suitably-toothed sheet-metal &c. blank *b* attached to a handle *e*. The blanks may have various forms, so that when bent a cylindrical comb with rounded ends may be formed on a comb of polygonal or D-section, &c. The fifth form is made by the process of moulding. The last Fig. 1 shows three different forms of teeth *e*, *f*, and *g*. The body of the comb may be hollow or solid and in one or several pieces. In the construction of these combs hard rubber, clay capable of being moulded and baked, cast metal, &c. may be employed.

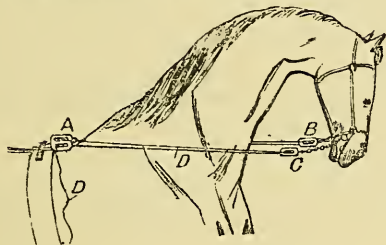
8694. Rogers, H., Howes, W., Burley, W., and Howes, W., [trading as Howes & Burley]. June 13.



Rein-holders.—One modification is shown in Fig. 1 attached to the driving-rail, and consists of a lever *h* centered at *k* and depressed by a spring *n*, a thumb-piece *i* being provided for raising it when necessary. The lever is preferably fitted with a rubber tube *p* which bears on the reins. Another modification, shown in Fig. 7, consists of a holder *t* formed with a boss *t*² sliding vertically on a stud or upright *u* and depressed by a spring *y*¹ its motion being limited by a pin *w* working in a slot. Either modification may be attached to a dashboard by means of a trough-shaped plate fitting over the edge of the board.

if the rider be thrown, the saddle is detached from the horse. Other means for connecting the pieces A and B may be used.

9824. McKenny, J. July 6.



Bridles; halters.—Relates to a device for controlling restive or nervous horses, and applicable for use during operations. A cord D is attached to the double pulley-block A fixed to a crupper or roller, or to both, and then passes through the block B, back through the block A, through the block C, and back again through the block A. The blocks B and C are attached to a leather or other bit. The animal is controlled by pulling the free end of the cord D.

9881. Seton, C. C. July 7.

Traces.—Consists of means for automatically or otherwise varying the inclination of the traces by raising or lowering their points of attachment to the vehicle.



Across the front of the vehicle is mounted a shaft 6 carrying two levers 7 to the ends of which the traces 5 (or the whipple-trees when such are used) are attached. The shaft is acted on by a spring 9 which, when the draught of the vehicle is light, keeps the levers 7 in the position indicated by dotted lines. When the draught is heavy the pull on the traces rotates the shaft 6 against the tension of the spring, and the points of attachment of the traces are consequently lowered, thus increasing the grip of the horse on the road. Suitable means for enabling the driver to control the levers 7 may be provided.

10,063. Brigg, T. H. July 11.

Traces.—Relates to improvements on the invention described in Specification No 4530, A.D. 1888, for increasing the draught power of an animal by supporting the trace so



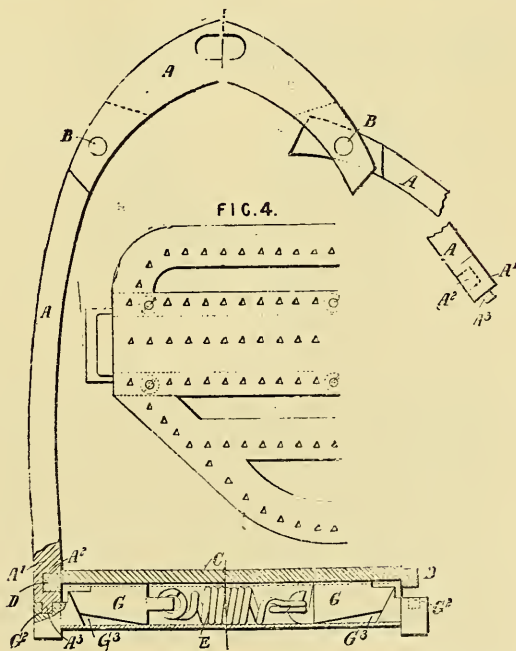
as to form an angle as shown. In this invention the trace 1 can be drawn up to a variable extent, when needed, by a chain &c. 6 passing at one end over a pulley 5 upon a pad 4 and at the other end over a drum 7, which may be rotated by a worm and hand-wheel as shown, or by other means. The angle of draft at the collar is made invariable by the belly-band 8. The invention is applied to vehicles and agricultural implements.

10,169. Bonnard, A. P. E. July 12.

Bridles, blinkers for. The blinkers have an india-rubber or like lining P, which may be inflated in the manner shown by air passing through a tube b from the driver. The animal is thus blindfolded and restrained.



10,232. Burn, M. J. July 14.

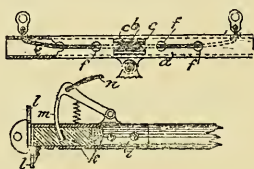


Stirrups.—The legs A are hinged at B and terminate in pieces A' with sockets A² to fit over the pins D on the tread C and with pins A³ to enter sockets G² in the bolts G held together by a spring E. If the rider is thrown, one of the legs A becomes detached from the tread and frees the rider's foot. The bolts G may be undercut at G³, so that the leg A may be readily placed in position again. The tread may be oval or of the form shown in Fig. 4, so as to guide the foot towards

one end in case of accident. The latter form also prevents the foot from passing readily too far through the stirrup.

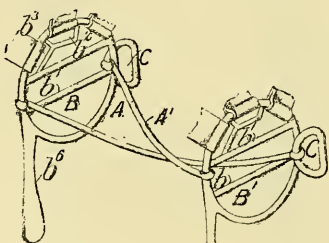
11,014. Haddan, R., [*Zschiesche, F. A.*]. July 30.

Runaway horses, releasing; fastening traces and pole-chains, draw bolts for. The traces are attached by eyes to ropes *e*, which are threaded through holes *f* in the whipple-tree *a*, and carry at



their inner ends loops with pulleys which bear against the vertical bolt *b*. This bolt bears against antifriction rolls *c* and can be drawn out by a cord, passing to the driver, when it is desired to release the traces. The pole-chains are attached to eyes *l, l*, which are held in place by the bolt *k* passing into the socket *i*. The bolt is released by pulling back the spring catch *m* by a cord *n* passing to the driver.

11,090. Campbell, H. W. July 31.



Bits.—The curved mouth-bars *A, A'* carry rings *C* at one end and are loosely attached at the other end to the check rings *B, B'*, which are provided with guide-bars *b^1, b^2* and strap loops *b^2, b^3* and are prolonged at *b^6* to prevent the bit from being drawn sideways through the mouth. The bit may be arranged in three ways; the arrangement shown is for preventing "lugging" and "tongue lolling," and to induce the animal to hold the bit properly. The ends of the double cheek straps and the reins are attached to the rings *B, B'*. In the second method, for tender-mouthed animals, the front cheek strap is omitted, the reins being secured as before. In the third method, for vicious and unmanageable animals, the reins are attached to the rings *C, C* instead of the rings *B, B'*. The rings *B, B'* may also be connected by a curb.

11,465. Rutten, C. Aug. 8.

Stuffing-materials.—Peat is made into wadding by drying it and successively heckling, beating,

and carding it, then mixing it with a small quantity of cotton, hair, wool, or other long fibre, and boiling it in water, after which it may be mixed with corrosive sublimate or other antiseptic and is again carded. This wadding mixed with a large quantity of foreign material, such as wool, hair, &c., is used for the stuffing of harness and the like.

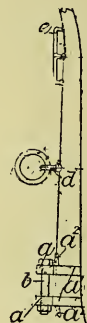
11,559. Richardson, T., Loads, H., and Sondheim, S. Aug. 10.

Collars, neck. The forewale is made of a metal tube suitably shaped and attached by a covering of leather &c. or by other means to the body, which may be stuffed or consist of a hair pad.

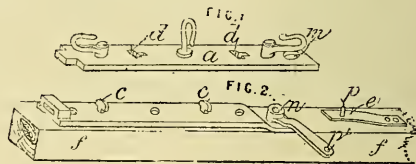
11,640. Parkes, J., and Gnosill, F. Aug. 13.

Collars, neck, hames for. The staples *e* for the straps securing the hames, the shanks *d* for securing the rein rings, and the eyes *a* or staple for securing the draught hook for the traces, or the traces themselves, are all fixed to the brass-covered hames by brazing. The staple *e* and shank *d* may have straps to increase the area of contact with the hames, but this is generally unnecessary. The eyes *a* are formed with straps *a'* encircling the hames either partly or entirely, or are made in one piece with a broad strap.

There may also be strengthening-lugs *a^2*. To these eyes the pin *b* is secured by nuts.



11,683. Leadbeater, A. Aug. 14.

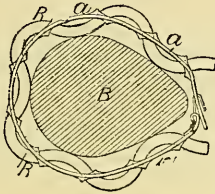


Runaway horses, releasing; fastening traces &c., slipping-devices for. The hooks, staples, or other connections for the harness, instead of being fixedly attached to the shafts or whipple-trees, are attached to a separate plate *a*, Fig. 1, having T-shaped slots *d* adapted to fit over T-headed bolts *c*, Fig. 2, fixed on the shaft *f* or on the whipple-tree or other part of the vehicle. In one end of the plate *a* is a hole *m* which fits on to an eccentric *n* on the shaft actuated by a lever in the end of which is a hole *p'* adapted to be engaged by a pin *p*

on a spring *e*. When the plate *a* is in place and the lever *p*¹ is turned parallel to the shaft, the narrow parts of the slots *d* pass under the bolt heads *c*, and the plate is locked for travelling. To release the harness the spring *e* is depressed to free the lever *p*¹, which is then turned until the eccentric *n* moves the plate *a* so that the wide parts of the slots *d* are under the bolts *c*, when the plate *a* will be free to be removed from the vehicle. In a modification, the bolts *c* are made rotary and controlled by springs, the sliding action of the plate *a* being dispensed with.

12,328. Glismann, O. Aug. 27.

Interfering rings.
— The strap *a*, which passes around the horse's leg *B*, is perforated for the band *R* of the rubber &c., or for separate U-shaped rubber strips with outwardly-directed ends.



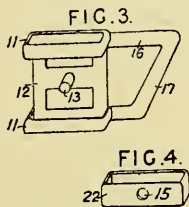
12,603. Ashford, W. G. Sept. 1.



Dog collars and leaders, straps for. To the strap *A*¹ is attached a spring hook *B* of any suitable form, and near the end of the strap is adjustably secured the buckle *D*, also of any suitable form. The frame of the buckle may slide on the strap *A*¹, and be held by the hook *B*, pressing either on the strong curved spring tongue as shown, or against the hooked part in the usual way. The looped part of the strap forms the dog collar, and the single part the lead when the strap is so used.

13,127. Latham, E., and Sawyers, E. A. Sept. 11.

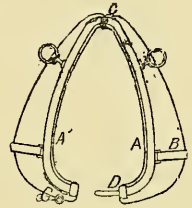
Fastening halters &c. The fastener is intended to supersede sewing and consists essentially of two loops 11, Fig. 3, united by a frame 12 in the centre of which is a pin 13. The two straps to be united, or the parts of the same strap when a loop is to be made, are passed through the loops 11 and over the pin 13. When one strap has to be united at



the side of another, as in headstalls, the fastener is formed with side bars 16, 17. Fig. 4 shows a loop 22 for the free end of a buckle strap. It is provided with a hole 15 to pass over the pin 13, and is held down by one of the straps which pass through the loops 11.

13,343. Lehmann, C. H., and Southcott, J. H. Sept. 15.

Collars; fastening hames. The collar *B* and hames *A*, *A*¹ are combined so that the latter forms a front rim round which the leather covering of the collar is secured. The collar and hames are hinged at one end *C*, and have a spring catch at the other end.

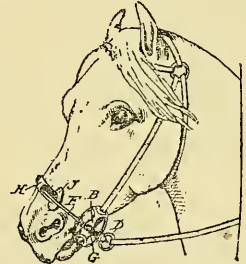


In the form of catch shown a projection *D* on one hame fits into a socket in the other, and is held therein by a spring pin *G*.

13,390. Britt, L. P. Sept. 17.

Bits; bridles.—

The device is for controlling restive horses and consists of rods *F*, which, when pulled with sufficient force to overcome the springs *G*, cause the pads *J* on the ends of the spring band *H* to press upon the nasal passages and control the animal. The curb chain is at the same time tightened by reason of its connection with the bit rings *D* after passing through rings on the cheek pieces *B*. The above arrangement is for stiff bits; for snaffle bits the rods *F* end in loops passing over the ends of the mouth-bar.



13,766. Macey, H. J., and Hopkins, J. Sept. 24.

Stirrup straps, suspending, safety saddle bars for.

The stirrup leather is attached to the frame *G* hung by a loop *J* to the piece *K*, *L*. The part *L* has a curved projection, and the part *K* a curved notch as shown to fit corresponding parts in a piece *A* which is shaped to fit upon the ordinary saddle bar, or upon a

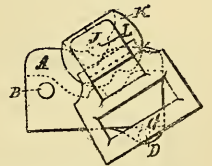
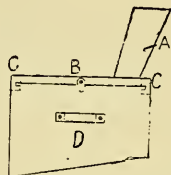


plate replacing it, its position thereon being determined by a stop D. The stop B prevents the frame G from swinging forwards. If the rider is thrown, the frame G frees itself from the piece K, L by sliding into the position shown.

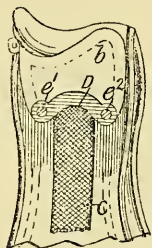
14,406. Hinchley, J. W., Woollason, W., and Hinchley, J. W. Oct. 8.

Droppings, devices for catching.—A plate B fitted with guides C for a drawer D is fixed to the shafts or other suitable part of the vehicle, a suitable guide being preferably attached to the harness for directing the dung into a funnel-shaped mouth A.



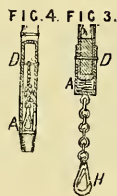
14,468. Wincer, T. Oct. 9.

Saddles, harness. A metal piece D of U-section, and in one or two parts, is fixed to the saddle-tree by screws e^1, e^2 . The edge of the skirts b enters the groove in the piece D, and is thus protected from the friction of the back-band C.



14,812. Bryans, H. M. Oct. 15.

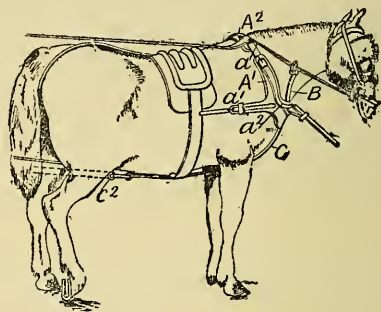
Dog leaders; whips and hunting-crops.—Dog leaders consisting of a swivel-hook H and chain are attached by a bayonet-joint tube A and pin D, as shown in Fig. 3, or by a pin D, as shown in Fig. 4, to umbrellas or walking-sticks, whips, hunting-crops, &c. In the latter arrangement the chain passes through a hole in the stick, covered by an outer tube A, or through the end of the stick &c., which is then provided with a detachable ferrule.



15,098. Barlow, J. T. Oct. 20.

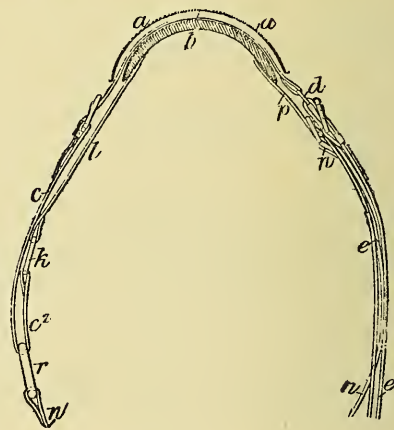
Collars; traces.—The object is to transfer the draught from the shoulders to the breast. The collar consists of two parts, namely, a neck part A^2 and a breast part A^1 , suitably padded and connected by straps a . The pole strap, when used, is attached by a loop a^2 , beneath which the martingale B passes. The sides of the breast part A^1 have

tug straps a^1 for use as usual if desired. To the bottom of the collar is attached the strap C, which passes between the fore and the hind legs as a



single trace, or terminates in a curved metal strip c^2 , to the ends of which are connected two traces embracing the hind legs. In a modification, the traces are connected to the tug strap a^1 , and side straps connect the traces to the strap C after it has passed between the fore legs. Draught chains may be used instead of straps.

15,837. Rees-Philipps, H. Nov. 2.

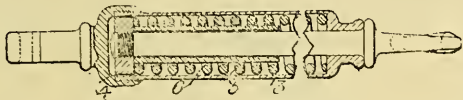


Stirrup straps, suspending; saddle girths.—The stirrup leather e of a lady's saddle is suspended as follows in order to equalize the strain. It is buckled to a loop d on the strap c , which passes through a curved tube a or trough bridging the tree b , and is looped at c^2 for attachment to the link k on the strap l , fixed to the tree. The girth n is connected by a link r to the strap c , and at its other end is buckled to the strap p fixed to the tree.

15,943. Wilson, J. A. Nov. 5.

Fastening, spring attachments for. An elastic device is employed to connect the harness to the vehicle or different parts of the harness together, the object being to prevent the strain on the

animal at starting or stopping. The Figure shows a section of one form of device in which a coiled spring is used. The spring 5 is compressed



between the washer 4 of the draw-bar and the end of the case 3, a sleeve 6 limiting its motion. A coiled spring may also be used in extension, or india-rubber may be used as the elastic medium.

16,065. Kirker, M. B. Nov. 6.

FIG. 3.

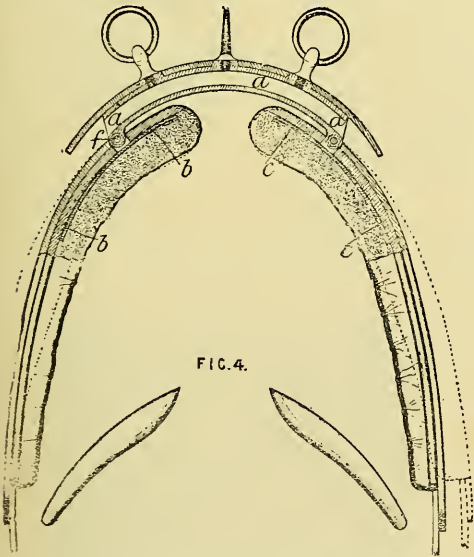


FIG. 4.



Yokes, neck.—These are made of metal tubes tapering from the centre to the ends, the fittings for connecting the parts together or to the vehicle or harness being shrunk on. The Figures show the application of the invention to whipple-trees.

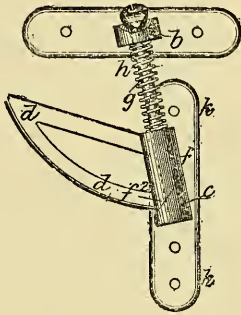
16,280. Rees-Philipps, H. Nov. 9.



Saddles; pack-saddles.—Relates to adjustable harness and pack saddles. The saddle-tree consists of an arched and tubular or grooved piece *a*, to the ends *f* of which the side flaps *b*, *c* are hinged. The flaps may be padded or covered with felt, or with cork or sheet zinc. For pack-saddles they consist of wooden bars shaped as shown in Fig. 4.

16,374. Rees-Philipps, H. Nov. 12.

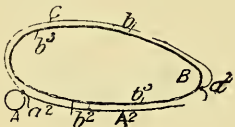
Stirrup straps, suspending, safety saddle - bars for. The bar proper *d* is formed with a straight and upwardly - inclined part and a curved lower part, both parts being fixed to a tube *f*, which turns on the rod *g*, and may have an inclined face *f*² to fit against the part *c*, fixed to the plate *k*, which is secured to the saddle-tree.



By this means a forward jerk on the stirrup strap causes the bar *d* to turn upwards and forwards round the rod *g*, and free the strap. The return of the bar *d* may be assisted by a spring *h*. The upper part of the rod *g* is loosely secured to a plate *b* fixed to the tree. The plates *b* and *k* may be in one, and the bar *d* may be similar to the ordinary latch saddle-bar.

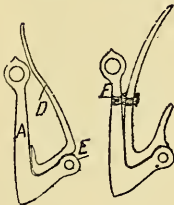
16,486. King, H. E. Nov. 13.

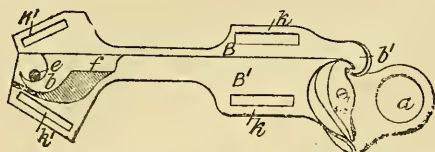
Collars, neck. The fore-wale *A* and after-wale *A*² are made of thin metal in one or more pieces, and the padding is attached to this shell by stitching or riveting &c. at *a*². The padding or backing may be of elastic sheet metal, or may consist of an inflated rubber bag *b*³ protected by canvas and leather casings *b*², *C*.



16,792. Bennett, C. H. Nov. 19.

Fastening, slip-hooks for. Two forms of the hook are shown in the Figure. The point of the main hook *A* is pivoted at *E* to a second hook *D*. The strain on the complete hook holds the two parts together, the clip *F* serving this purpose when the strain is removed. The hook *D* is pulled to release the chain &c. attached.

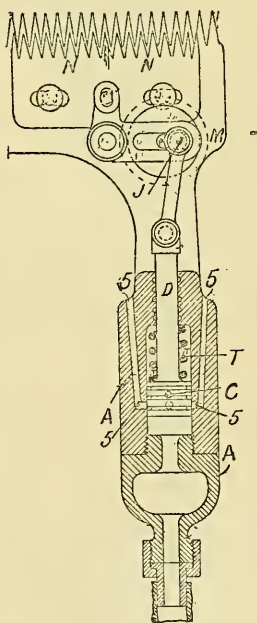


16,874. Hardy, F. Nov. 20.

Fastening halters, reins, &c., clasps for. The Figure shows the fastener adapted for connecting the straps of a halter, which, by this invention, may be secured to the animal's head without having to pass it over the nose. The fastener consists of two parts B, B', provided with loops *k*, *k'* for the nose straps, and loops *K*, *k'* for the throat strap. The hitching-strap is attached to the ring *a* on the part B'. The connection is formed by the engagement of the hooks *b*, *b'* and tongue *f* on the part B with the bar *e*, the spring catch *d*, and a groove respectively in the part B'. When the fastener is used for reins and other straps it is shortened, and the loops *K*, *k'*, and *a* are dispensed with. The straps may be riveted in sockets instead of being attached to loops like *k*.

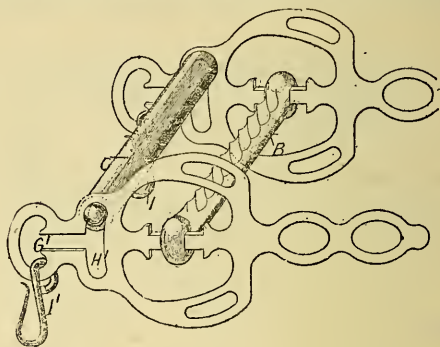
17,350. Warsop, T., and Wigley, G. Nov. 29.

Horse clippers and the like.—Relates to clippers actuated by compressed air or other motive fluid. The comb N receives reciprocating motion over the comb M from a piston C in a cylinder A forming the handle. As shown, the motion is transmitted from the piston-rod D by a slotted bell-crank lever and a crank disc with pin J. Or the head of the piston-rod may engage an oblique slot in the comb. The motive fluid reaches the bottom of the cylinder through flexible tubing and pushes the piston up till the outlet ports 5 are uncovered, when a spring T drives it back. In a modification, the piston is worked in both directions by the fluid.

**17,392. Fenner, G.** Nov. 29.

Bits.—An extra mouth-bar C is arranged above the ordinary mouth-bar B which is placed low down in the animal's mouth, so as to give a powerful control. The mouth-bar C is covered

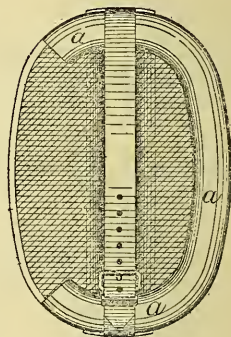
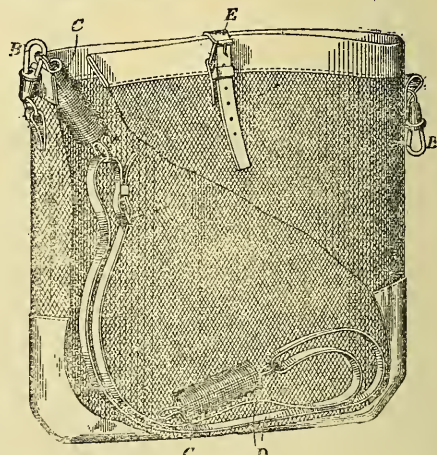
with india-rubber, and terminates at each end in a knob with a grooved neck, which is slid into the



slot H' after the knob has been passed through the wider slot G'. The hooks I, I' are for the curb chain.

17,550. Ihne, W. B. Dec. 1.

Nosebags.—A curved overhanging rim *a* is made to prevent loss of food if the bag is tossed up while in use. The rim may be in one piece with the bag, or of leather &c. kept in shape by curved metal pieces at intervals. It may also be of metal, vulcanite, wood, &c., or of bent wire suitably covered.

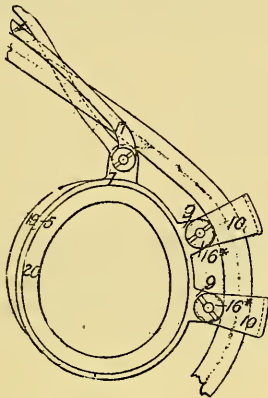
**18,068. Turner, W. H.** Dec. 11.

Nosebags.—Springs C of metal or rubber are

used to connect the head-strap D with the snap-hooks B, or buckled straps attached to the bag. The head strap and springs may be turned inside the bag when not in use, as shown. The mouth of the bag is closed by a strap E.

18,077. Davey, A. Dec. 11.

Tugs, shaft.—The body 5 of the tug is made of metal with lugs 7, 9, 9 for the buckle 11 and loops 10, 10. It is lined with gutta-percha &c. 20, and may have a pad of gutta-percha 19 where it rubs against the animal. The pivots of the lugs 10 are provided with anti-friction rollers, and are secured by nuts 16*.

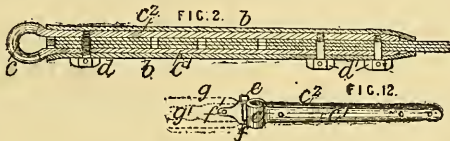


18,264. Mason, M. H. Dec. 14.

Whips.—The butt of the whip thong is strengthened by a steel or other elastic metal core a, preferably covered with paper, sheet india-rubber, &c. c. Leather b is plaited over this core in the usual way.



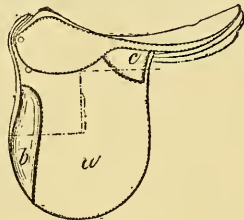
18,901. Moliere, G. W. Dec. 27.



Collars; fastening traces. Relates to hame and breast collar tugs. The eye c is formed with long shanks c¹, c² between which the trace end is secured by screws d, d¹ passing through the shanks and holes in the trace. The shanks are encased in a leather sleeve b, which shows a hame tug fastening. The fastening for a breast collar, Fig. 12, is provided with a neck strap loop e, layer loop f, and lug f¹, which is placed under the layer g¹, and is riveted to the breast collar g, shown in dotted lines.

18,995. Mason, M. H. Dec. 29.

Saddles.—The knee rolls b, and rear pads or 'blisters' c, of shaft riding saddles are made of vulcanized india-rubber, either solid or spongy, or as inflated bags. The pads are covered with leather and sewn to the flaps a, or are inserted between the inner and outer layers of the flaps.



19,012. Hardingham, G. G. M., [Geer, Baron L. de]. Dec. 29. Drawings to Specification.

Halters.—The hitching strap or rope of a halter may be made in two parts, each of which can be connected to a detachable ring on the stall, adapted to be automatically released if a horse gets its leg over the hitching-strap.

APPENDIX.

The following abridgments should be added to those appearing in the volume for A.D. 1877-83.

A.D. 1877.

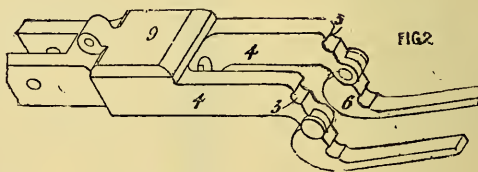
1008. Pitt, S., [*Vulcanized Fibre Co.*]. March 13.

Materials for making.—Vulcanized fibre is used for making harness loops and is made by saturating paper, paper pulp, or textile fabric in a bath of concentrated mother liquor resulting from the manufacture of chloride of zinc, tin, &c. Paper sheets thus treated may be united by pressure. By adding certain substances to the bath, or by other means, the material may be made like horn, or it may be made to resemble soft vulcanized rubber &c.

A.D. 1882.

5849. Rexford, J. Dec. 7.

Fastenings, slip-hooks for. Relates to a connection between two objects in which instant disconnection is required in cases of emergency, and consists in hinging tongues 6 to a metal piece fixed to one of the objects, and in combining with that piece a spring catch 9 which can be withdrawn to release the tongues. In the application to the shafts of a vehicle, the back end of each shaft, which may be provided with a bolt for attaching the traces, is received



between the arms 4 of a metal piece 5, fixed to the vehicle. When the shaft is in position the tongues 6 are turned over to rest upon the arms 4 and are retained by a spring catch 9, by withdrawing which the tongues are released and the shafts disconnected.

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PRINTED FOR HER MAJESTY'S STATIONERY OFFICE,

By DARLING & SON, LTD., 1, 2, 3 & 5, GREAT ST. THOMAS APOSTLE, E.C.

PUBLISHED AT THE PATENT OFFICE, 25, SOUTHAMPTON BUILDINGS,

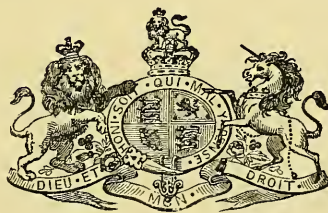
CHANCERY LANE, LONDON, W.C.

PATENTS FOR INVENTIONS.

ABRIDGMENTS OF SPECIFICATIONS.

CLASS 62,
HARNESS AND SADDLERY.

PERIOD—A.D. 1889–92.



LONDON:
PRINTED FOR HER MAJESTY'S STATIONERY OFFICE,
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PUBLISHED AT THE PATENT OFFICE, 25, SOUTHAMPTON BUILDINGS,
CHANCERY LANE, LONDON, W.C.

1898.

EXPLANATORY NOTE.

The contents of this Abridgment Class may be seen from its Subject-matter Index. For further information as to the classification of the subject matter of inventions, reference should be made to the *Abridgment-Class and Index Key*, published at the Patent Office, 25, Southampton Buildings, Chancery Lane, W.C., price 1s., postage 5d.

It should be borne in mind that the abridgments are merely intended to serve as guides to the Specifications, which must themselves be consulted for the details of any particular invention. Printed Specifications, price 8d., may be purchased at the Patent Office, or ordered by post on the Patents Form C' (to be obtained from any Post Office), no additional charge being made for postage.

SUBJECT-MATTER INDEX.

Abridgments are printed in the chronological order of the Specifications to which they refer, and this index quotes only the year and number of each Specification.

Animal clippers. *See* Horse clippers &c.

Animal muzzles. *See* Muzzles &c.

Animals, Stocks and like appliances for holding. '89. 4960. '91. 11,751. 14,351. '92. 13,823. 16,028.

Bags or nosebags. *See* Harness &c.

Bags, Saddle. *See* Harness &c.

Bearing-reins. *See* Harness &c.

Bits for animals. *See* Harness &c.

Blankets, Horse. *See* Harness &c.

Blindfolding-appliances for animals. *See* Harness &c.

Blinkers, Bridle. *See* Harness &c.

Boots, Horse. *See* Harness &c.

Breaking-in horses and other animals. *See* Training and breaking-in horses &c.

Bridles. *See* Harness &c.

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Cinches or girths. *See* Harness &c.

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Collars, Dog and like. *See* Dog collars &c.

Collars, Horse. *See* Harness &c.

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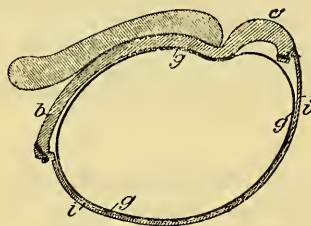
HARNESS AND SADDLERY.

Patents have been granted in all cases, unless otherwise stated. Drawings accompany the Specification where the abridgment is illustrated and also where the words *Drawings to Specification* follow the date.

A.D. 1889.

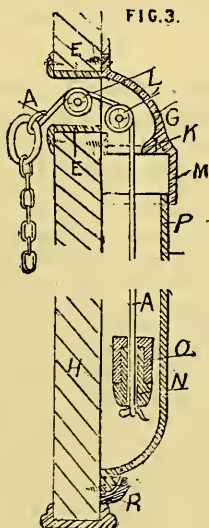
557. Rees-Philipps, H. Jan. 11.

Collars, neck; fastening collars, couplings for. The front *b, c* of the collar is moulded in vulcanite, papier mâché, or like hard non-metallic material. Advertisements may at the same time be moulded upon it. Strengthening-pieces may also be moulded in the material and these may serve as supports for the rein rings and hame tugs, the hames being then dispensed with. The forewale *c* and afterwale *b* may be in one piece or in separate pieces suitably attached. Elastic pads of woven wire or helical springs or air cushions *g* are attached to this front *b, c* by the backing *i* of leather, serge, &c. The hard part of the collar may extend so far round as to be almost tubular and to render the backing *i* unnecessary. The collar may be divided into two halves hinged together at the bottom and provided at the top with a fastening which may consist of two half-bolts (the division plane passing through the axis) united by a nut, or of two spring catches or snaps.



631. Ballard, D., and Blyth, W. Jan. 12.

Halters.—The object is to secure horses &c. so that they may be readily released from the adjoining stalls, and also to prevent the noise caused by the motion of the halter rein. The horse is fastened by two halter reins *A*, passing one through each side *H* of the stall. The rein passes over rollers *L, L* in the metal bush *E* and hood *G*, and terminates in a log *N* covered in part with rubber or felt &c. *O* to prevent noise. The log travels up and down in the shield *P*, suitably held in place by the part *M* of the hood *G* and by the staple *R*, so that it may be easily removed to allow of the detachment



of the log *N*, and the consequent release of the halter rein; or the shield *P* may be hinged.

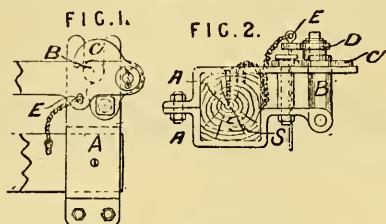
833. Hillier, W. H. Jan. 16.

Stirrup straps, suspending.—The main object is to suspend a stirrup so that it may be temporarily lowered to facilitate mounting. The Figure shows one suitable device consisting of metal plates *b* and *c*, carrying respectively a loop *a* for the stirrup leather, and a hook *d* to hang on the ordinary saddle-bar. A spring catch *f* holds the plate *b* in its raised position after the rider has mounted and the plate has been turned up. In a modification of this form, the hook *d* and catch are in one, and the spring is dispensed with. In another modification, the loop *a* is replaced by the saddle-bar, and the plate *c* is riveted to the saddle-tree. In another form, there is a single plate *b*, slotted so that the loop may rest at the top or



bottom of it. In another form, an extension of the stirrup strap is adapted to be looped up and hooked to an S-shaped hook hanging from the saddle-bar.

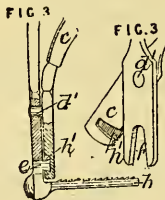
1041. Bickford, E. W. Jan. 19.



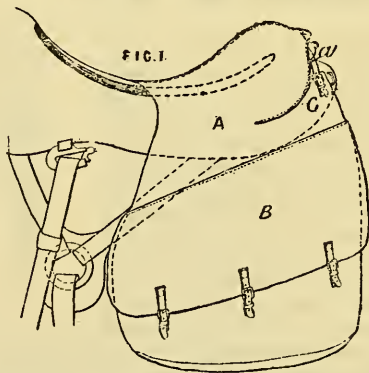
Runaway horses, releasing; fastening traces, slipping-devices for. Relates to fastenings for traces, which can be released simultaneously when required. Upon the splinter bar of two-horsed vehicles are bolted clips A, the flanges of which are bridged in front by a hinged bolt B, which passes through the end of the trace and is held by a hook C connected to a bar D. The bar connects a pair of similar fastenings for the two traces, so that, on withdrawing the pin E and pulling the bar, both traces are simultaneously released.

1151. Bradbury, J. Jan. 22.

Stirrups.—Relates to the method of fixing the hinged tread of safety stirrups at the free end. The tread b has a hook e, which enters a slot f in the outer bow, and hooks into a curved groove h' in the inner bow c, which is pivoted at d' to the outer bow.



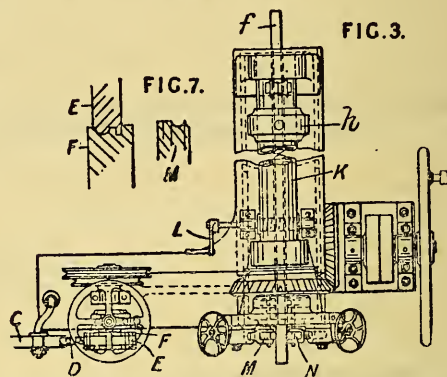
1234. Hutton, E. T. H. Jan. 23.



Saddles; saddle bags.—The saddle bags B, one on each side, are suspended from the cantle of a modified form of American saddle having no

panels. The bags are connected by a flap A, which extends over part of the seat, envelops the cantle, and has extensions C connected by a strap a. The wallets are dispensed with.

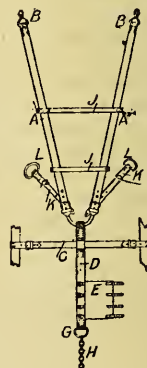
1390. Plumb, F. E. Jan. 25.



Dog collars; ornaments for unspecified articles.—Relates to a machine for producing, from a continuous metal or composition strip, a spirally-wound tubular casing which is subsequently flattened by suitable dies and applied as a covering to dog &c. collars and harness ornaments. The strip is first passed from a roller C, Fig. 3, through a guide D, and is then acted upon by a small wheel which turns up one side of the strip, after which it passes between grooved rolls E, F, and is then drawn between a pair of dies and finally wound upon a mandrel f while three rolls or dies, two of which M, N are shown, interlock and close the edges of the strip. The mandrel f is rotated and moved along by being connected by a screw to a loose collar h working on and along a slot in a tubular rotating axle K, and a windlass L serves to draw the mandrel f back to its starting-point. Fig. 7 shows sections of the rolls or dies.

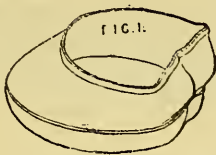
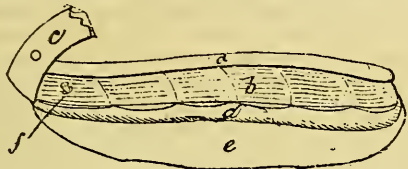
1481. Cole, P. Jan. 28.

Breeching.—Consists in a system of straps to prevent the animal from kicking. The straps A are hooked at B to the hame tugs, and are connected together at a point on the tail; the strap D passes along the tail and the broad strap E is buckled round it. From the ring G passes a chain H to the axle. Cross-straps J, J connect the straps A, and a strap C attached to the strap D passes from shaft to shaft. Straps K, K pass from the buckles on the straps A, A through the shaft tugs and back to the breeching.



1815. Louis, E. Feb. 1.

Horse-boots.—The boot, which is for general use as a horse-shoe, consists of a moulded casing of india-rubber or like material fitting closely to the hoof. The frog may be covered in or left open, and the thickened wearing-rim may be notched to prevent slipping. The boot is kept on solely by its elasticity.

**1973. Sondheim, S., Richardson, T., and Loads, H. W.** Feb. 4.

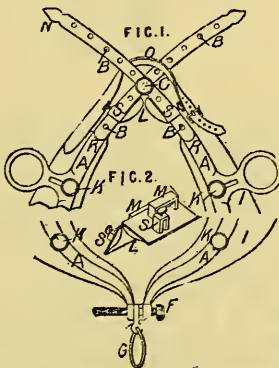
Collars, neck.—The Figure shows a side view of the collar. To the leather forewale *a* is stitched a quilted straw pad *b* shaped to support the hames. This pad is covered with patent leather *c*, which is shown stripped off. Behind the straw pad *b* is an air pad *d* embedded in flock or other padding, and encased in leather *e*, shown partly removed. The air pad is inflated through the nozzle *f*.

2263. Trimmer, J. Feb. 8.

Fastening backbands, shackles for. At the end of the backband is attached a shackle *D* provided with a grooved roller *D*¹ to run on the staple *B* fixed to the shaft *A*. The roller is attached by a pin &c. *D*², which may be withdrawn to release the backband from the shaft if desired.

**2654. Rutter, A. T.** Feb. 14.

Collars, neck; fastening hames. The collar is made adjustable by the fastenings of the hames *A*, to which the padded metal plates *I* are attached by screws *K, K*. The upper hame fastening is formed by a screw *C*, which takes into suitable holes *B* in the curved extensions *R, R* of the hames. These extensions may be telescoped to the rest of the hames. A neck pad *L*,



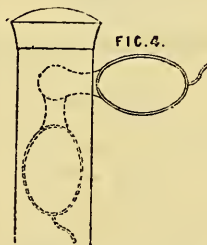
Figs. 1 and 2, which may have loops *M* for the "bugle straps," is adjusted on these extensions by set-screws passing through loops *S*. The upper fastening may be strengthened by a strap *O* and buckle. The lower hame fastening consists of a bolt *F*, as shown, which serves also to fasten the ring *G* for the pole straps.

2997. Evans, J. E. Feb. 20.

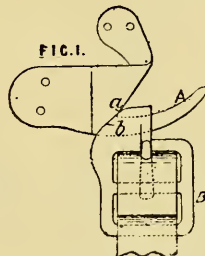
Fastening traces &c., snap hooks for. The hooked part *a* and latch *b* are pivoted at *d* and extend beyond the pivot to form eyes *e*, through which passes the pin *g* of the frame to which the strap &c. is attached. A spring strip *h* or a coiled spring keeps the hook normally closed.

**3031. Bussey, G. G.** Feb. 20.

Whips combined with eyeglasses &c. Consists in mounting eyeglasses or reading-glasses in the handle or stick of a whip &c. The glasses are pivoted in a recess in the upper part of the stick or in the handle, and held either extended or closed by friction, or by springs or clips. The Figure shows the application of a double eyeglass to a walking-stick.

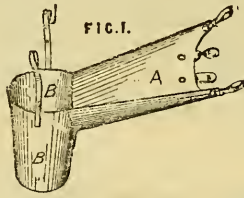
**3122. Brown, F.** Feb. 21.

Stirrup straps, suspending.—The buckle *B* is formed with an eye to pass over the inclined arm *A* of the saddle-bar proper. The buckle has also an inclined surface *b* to bear against the surface *a* on the bar, so that, in case of the rider being thrown &c., when the stirrup leather is pulled upwards the buckle is forced backwards and released.

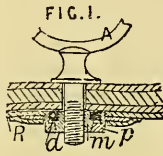


3377. Slow, J. Feb. 25.

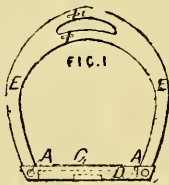
Droppings, devices for catching.—A device for catching horse droppings is formed by a shoot A terminating in a receptacle B. The device is attached to the breeching and to the vehicle by suitable straps.

**3467. Strobehn, F., and Janns, P.** Feb. 26.

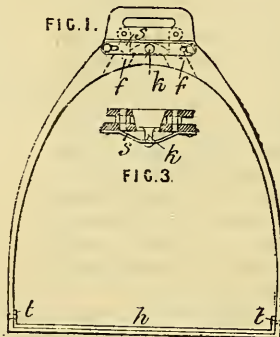
Saddles, harness. Relates to a method of attaching the padding to the saddle. The Figure shows a longitudinal section through the saddle at one of the terret rings, the padding being omitted. The covering enclosing the padding is secured to the plate R to which the socket p is riveted. The plate R is fixed beneath the saddle by screwing the shank of the terret A or other screw into the nut m. This nut is shouldered so as to bear against the ring d which screws into the socket p. By this fastening a worn nut may be replaced without removing the padding.

**3519. Thompson, W. P., [Leoni, G.]** Feb. 27.

Stirrups. — The stirrup is divided at the eye and the legs are pivoted to the tread at A, A. The legs are held together by springs D which press on flat parts of the legs below the pivot and by a bar C fixed to one of the legs and resting on the tread. When a fall occurs, the rider's foot ceases to press on the bar C and forces the legs E apart, thus freeing the stirrup from its strap.

**3592. Sollors, E. G.** Feb. 28.

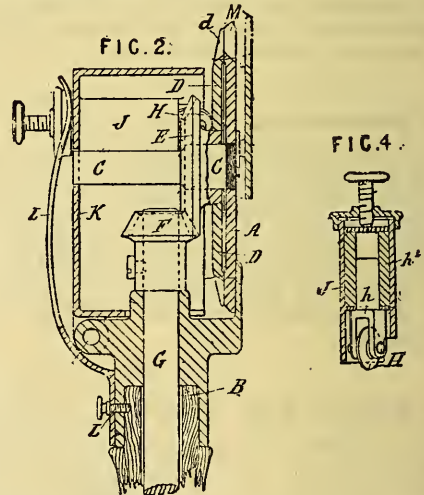
Stirrups. — The eye is formed as a separate piece, and carries pivoted catches f which engage with the inclined sides of a slot in the main bow. The catches are held apart by a piece with a pin k held outwards by a spring s. A second bow, hinged at t to the main bow f and formed with a tread part h, lies behind



the main bow. If the rider falls his foot ceases to press on the part h and catches against the second bow, which turns upon its hinges t against an opposing spring so as to press against the spring k and force out the piece between the catches, thus detaching the eye.

4430. Whiting, H. G. March 14. *Drawings to Specification.*

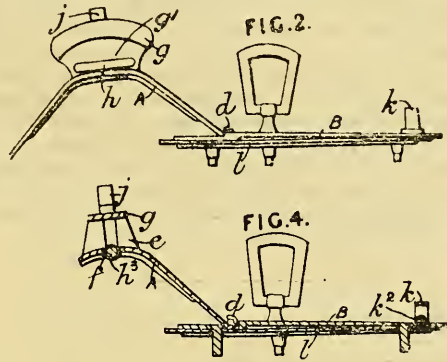
Clothing for animals.—Relates to appliances containing magnets or crystals for the treatment of nervous and other diseases, stated to be applied to clothing for animals among other uses. The magnets may be in the form (1) of thin perforated steel plates protected by varnishing or electroplating, covered with a woven fabric, and magnetized so as to have a polarity round the perforation as well as at the ends of the sides, (2) of woven wire, or (3) of particles of steel or iron incorporated with india-rubber, gutta-percha, or similar material. The crystals are cut into slices, and enclosed in metal frames, which may be magnetized or in cases or bags.

4775. Muir, A. March 19.

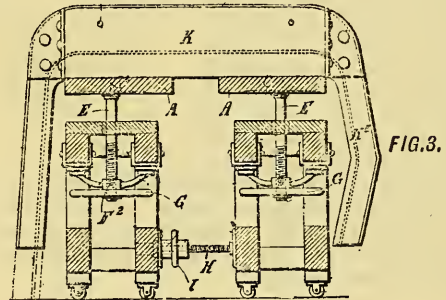
Horse clippers and the like.—A circular, toothed, rotary cutter is employed for clipping horses, sheep, and other animals. This cutter D with teeth d rotates over a toothed disc A attached to a handle B. The spindle C is geared by bevel gears E, F to a shaft G passing through the handle. The shaft receives rotation from a motor by flexible shafting or other suitable connection. A cover K is hinged to the handle and held down by a latch L. Sockets J formed in the cover enclose springs which bear upon the cutter through friction rollers H. To regulate the length of hair cut, there is an extra comb M held by set-screws in lugs at the sides of the disc A.

4798. Rehkopf, F. March 19.

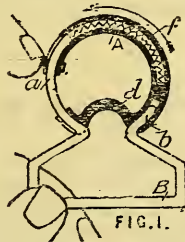
Saddles, harness. The Figures show an elevation and central section of part of the frame or tree of the saddle. The frame consists of metal plates, of which the central plate *A* is arched and hinged at *d* to the side plates *B*, which project beyond the hinges *d*, so that their downward movement is limited. To the plates *B* are attached under-plates *l*, to which the pads are secured, and loops *k* carrying antifriction rollers *k*². The top plate *g* is secured at its front end to a raised part *e* of the plate *A*, and towards the rear rests upon a flange *g*¹, to which is fitted a piece forming a loop *h* at the rear, and a roller *h*³ in front, which part lies in a slot *f* in the plate *A*, and at the end rests in a slot *e*¹. The check rein hook *j* is secured to the part *e*, and extends through the plate *g*.

**4960. Lawrance, G. McG.** March 21.

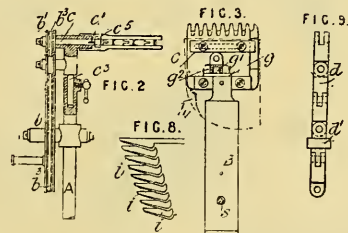
Animals, stocks and the like for holding.—Relates to apparatus for the electrical or other treatment of horses and other animals, and consists chiefly in means for raising the animals from the ground and for administering the electric current. Fig. 3 shows a section of the lifting-apparatus. Tables *A, A* are supported upon spindles *E, E* which can be raised and lowered by means of hand-wheels *G, G*, the distance apart of the tables being adjusted by a hand-wheel *I* and screwed spindle *H*. The body of the animal is supported upon a non-conducting bed *K*, with extensions *K*² for the legs; the bed and extensions are lined with a conductor which forms the negative electrode, the positive electrode consisting of a sponge mounted on a conducting-disc.

**5716. Fleischhauer, O.** April 3.

Fastening, ring coup-lings for. Relates to key rings and to ring fastenings for harness. The upper part of the ring *A* is hollow and works on the extension *a* of the part *B*, a spring *f* serving to keep the part *A* in the position shown. To attach a key &c. the part *A* is moved in the direction of the arrow till the bend *d* is beyond the point *b*, the key is then placed on the point *b* and the part *A* returned to the normal position, allowing the key to pass on to the part *B*. A second movement of the part *A* allows the key to be moved up on to it.



stand *A* is mounted a grooved hand-wheel *b* and a shaft *c* connected by a driving-belt *b*³, which is bent three-parts round a grooved wheel *b*¹ on the spindle *c* by a guide-pulley *b*². To adjust the



tension of the belt the shaft *c* is carried in a bearing *c*³ on a stem which can be raised and lowered in a socket at the top of the stand *A*. The spindle has a slotted screwed end *c*¹ with a nut *c*² which tightens it upon the tongued end of the flexible shafting *d*. The latter is made of short cylindrical sections jointed at right-angles, and is enclosed in an india-rubber tube with stiffening-rings *d*¹ at intervals. In order to reduce the friction of the

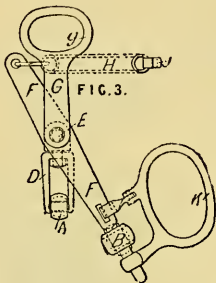
6003. Steidl, J. April 8.

Horse clippers and the like.—Relates to reciprocating comb clippers, for men and animals, driven from a fixed motor by flexible shafting. On a

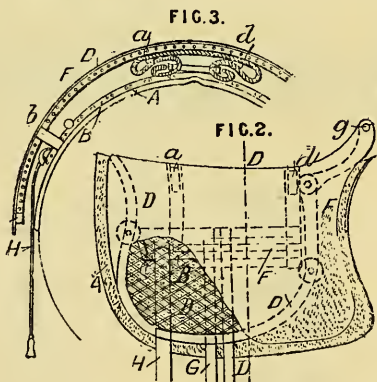
spindle in the hollow handle of the clippers only two short bearings are used within. The protruding end of the shaft is provided with an eccentric stud g^1 on a disc g which works in a groove in a bracket g^2 on the reciprocating comb C. The stud carries an antifriction sleeve. A socket attached to the flexible shafting in the same way as the spindle c is screwed on the spindle b by a set-screw s accessible through a hole in the handle. A ploughshare attachment h deflects away the cut hair to one side. For sheep-shearing instruments the under teeth are made with ribs i .

6331. Dunnachie, J. April 13.

Bits.—There are two mouth-bars, of which the upper A, preferably rigid, is connected by a swivel or other link D to the square pin E, which is fixed at its other end to the piece G so that the mouth-bar A is always in a straight line with it. The piece G is provided with a loop g for the cheek strap. The lower mouth-bar B, preferably rigid, is connected to the lever F, on which it is held by the removable ring K. The lever F turns on the pin E, and at its upper end is attached to one end of the curb chain H, preferably formed with a long flat link J.



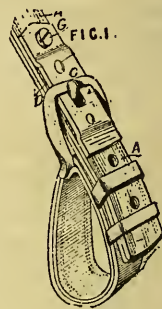
6407. Knauss, E. April 15.



Saddles.—Relates to ventilated riding saddles. Fig. 2 shows an elevation, and Fig. 3 a section on the line D D. The saddle consists of two frames carrying wirework B and D, of which the former is lined with felt A and the latter is covered with leather &c. F to form the seat. These frames are hinged together at g and are kept apart by springs a , d , and b . The girth G and stirrup leathers H are attached to the lower frame. The above arrangement may be used for ladies' saddles.

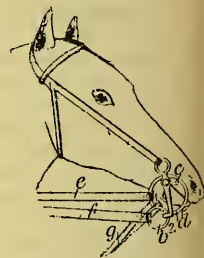
6479. Hill, T. W. April 16.

Straps and bands; backbands.—The piece of leather C, used to protect the backband A from the wear of the shaft-tug buckle, is strengthened by a metal plate D riveted to the piece C, which may be attached to the backband by a screw G and nut, or by a loop. The invention is applicable to harness straps in general.



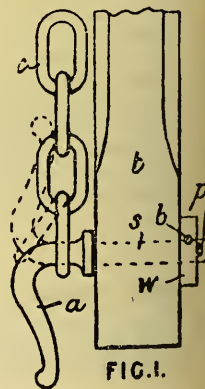
6600. Rees-Philipps, H. April 17.

Bits; martingales.—The object is to prevent a horse from throwing up its head or rearing. Large rings d are placed at the ends of the mouth-bar c , which is preferably a mullen mouth-bar, although a snaffle or chain or jointed mouth-bar will answer. To these rings are attached, for a saddle horse, the snaffle or bridoon reins e , and for a draught horse, the driving or bearing rein. The curb rein f is attached to the bit ring b^2 . The single strap martingale g is passed through both rings, one end being fastened to the girth, and the other to a neck strap. When the horse rears the martingale is strained, and draws the rings d together to grip the lower jaw; the mouth-bar is at the same time twisted, so as to press on the tongue.



6672. Shaw, G. A., and Hammond, C. April 18.

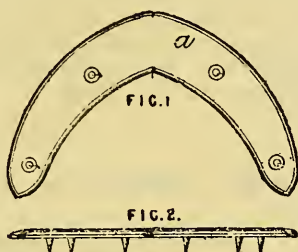
Fastening traces &c., hooks for. Relates to hooks adapted to release the cord or chain attached to them while it is in tension, and applicable to traces and draught chains for vehicles. The Figure shows a trace hook. The stem s is pivoted to the shaft t , being prevented from coming out by a split pin p and from rotating until desired by a pin b which passes through the washer w fixed to the shaft and bears against a flat part



of the stem *s*. When it is desired to release the chain *c*, the pin *b* is removed and the hook *a* is rotated. For pole-chains a hook may be formed at each end of the stem *s*, and the locking-pin *b* passed transversely through the shaft.

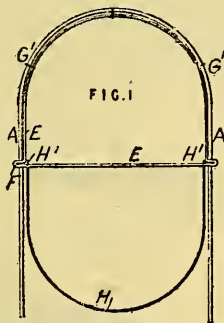
6837. Williams, W. April 24.

Collars, neck.—A plate *a* in one or more parts is attached to the top of collars worn by horses working in mines and like places to protect the collars from injury by striking the roof. This plate may have lugs at the top or sides for further protection and for better adjustment respectively.



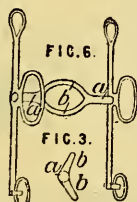
6870. Gardiner, E. C. April 24.

Nosebags.—The bag is attached to a metal frame *E* which may have a hinged part *H* covered to form a lid. This frame is connected by hooks &c. *G*¹ to an outer stout frame *A* which is adapted to be fixed to the shafts (as in the Figure), or to the pole of a vehicle by forming suitable sockets &c. on the latter. Chains or straps may be used to assist in supporting the bag.

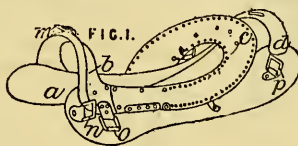


7128. Winder, R. April 29.

Bits.—The bit is rigid throughout, and the mouth-bar *a* is looped in the middle *b* and bent back as shown. When used as a snaffle there is no pressure on the roof of the mouth; and when used as a curb bit, the pressure on the roof of the mouth is less than that on the tongue. The nose-band described in Specification No. 797, A.D. 1884, may be used in conjunction with this bit, an additional pair of reins being necessary.



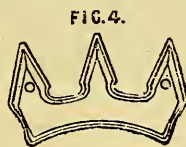
7557. Westphalen, J. H. von, and Gross, F. May 6.



Saddles.—Three forms of saddle-tree are described, namely, for military, for gentlemen's, and for ladies' use. Fig. 1 shows a military saddle-tree. The side plates *a*, of steel or other metal, or of wood &c., are specially curved to fit the horse's back, and are connected together by the front arch *b*, preferably of steel plate doubled along its front edge and by the back arch *d*. The seat *c*, of the shape shown and strengthened by a plate beneath, is riveted &c. to the side plates *a*. Loops are provided at *m* for the hanging strap, at *n* for the baggage, at *o* for the stirrup leathers, and at *p* and behind the seat *c* for attaching the rider's cloak. The girth is attached by screws to the side plates, which are slotted when made of wood, so that the girths can lie beneath the side plates and the seat. For gentlemen's saddles the back arch *d* and the loops for fixing the cloak are dispensed with, and the loop *o* is replaced by the saddle-bar. For ladies' saddles both arches *b* and *d* are dispensed with, and the side plates *a* are connected by two straps. The seat is also inclined to the right, and the stirrup leather is fastened to the right loop, and brought under the horse to the left loop. The near horn or pommel is screwed to a socket in the side bar, so that its position can be varied.

7570. Wolseley, F. Y. May 6.

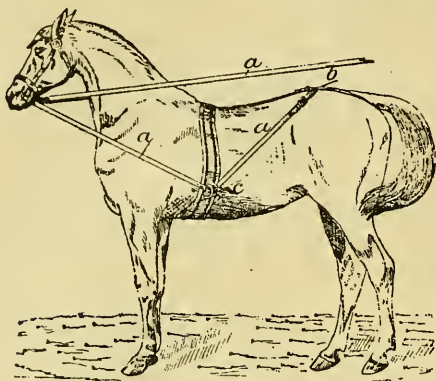
Horse clippers and the like.—The cutters are made hollow for lightness by stamping blanks into the form shown.



7769. Nuttall, C. F. May 9.

Dog collars.—The collar consists of three straps *A*, *B*, *C*, of which the straps *A*, *B* are connected together by a loop *d* and buckle *e* to form the collar proper, while the strap *C* is stitched to the strap *A*, and passing through the loop *d* terminates in a loop *f* for the lead. This strap tightens round the dog's neck if it struggles, and thus prevents it from withdrawing its head from the collar. When it is not desired to control the dog in this way, the lead may be attached to the loop *i*.

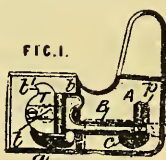
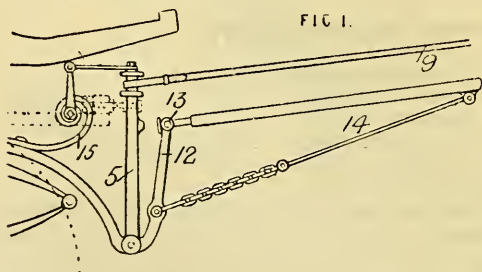


8167. Serjeant, W. H. May 16.

Bridles.—The reins *a*, either for riding or driving, run freely through rings on the bit or headstall, then through rings *c* on the girth, or part of the harness occupying about the same position, and lastly are attached to the crupper *b* or similar part of harness. A better control is stated to be thus obtained.

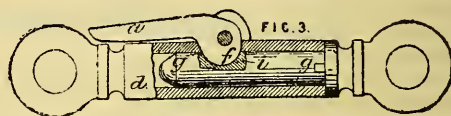
8634. Vickery, A. May 24.

Stirrup straps, suspending, safety saddle-bars for. Relates to saddle-bars constructed to release the stirrup leathers in case of the rider being thrown. The bar *B*, with or without the usual spring catch *p*, is hinged at *b* to the piece *T*, which is pivoted at *t* to the plate *A* fixed to the saddle-tree. Projections *a, c* on the plate *A* support the bar *B* and piece *T*, but do not prevent them from turning until in an extreme position, when the notch *t'* engages with the projection *a*.

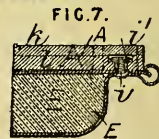
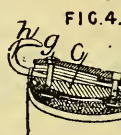
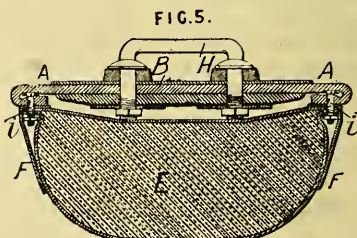
**9411. Brigg, T. H.** June 6.

Fastening traces, spring attachments for. Relates to harness and shaft attachments for facilitating the draught of vehicles. The traces *9* are attached

to a lever *5*, which is held in position by a strong spring *15*. The shafts are hinged at *13* to another lever *12*, to which they are also attached by a tie *14*. When the vehicle is travelling on a level road the spring *15* takes all the pull of the draught, but when the draught is very heavy, as in ascending an incline or in starting the vehicle, the spring *15* yields and the lever *5* bears against the lever *12*, thereby causing the front ends of the shafts to be pressed downwards, and a downward pressure to be exerted on the fore quarters of the horse, by which means his grip on the road is increased. Various other arrangements of the levers are described. The invention can also be applied to sledges and Bath chairs.

10,017. Aubrey, R. June 19.

Fastening, couplings for. Relates to a fastening or coupling stated to be applicable for harness &c. It consists of a female part *d*, of any suitable cross-section, and a corresponding male part *g*, locked together by a cam *f* on the end of a lever *a* pivoted to lugs on the female part *d*, and projecting into a recess *i* formed in the male part. The recess *i* may run completely round the stem *g* to form a swivel.

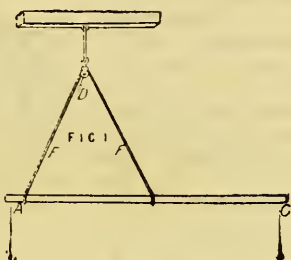
10,060. Durand, J., and Bonneau, P. C. L. June 19.

Saddles, harness. Fig. 5 shows a cross-section of the pad near one of the loops *H* for suspending the shaft-tugs, and Fig. 7 a similar section across a modified form of pad. Fig. 4 shows a cross-section through the top of the pad. The padding *E* is attached to the flaps *A* by screws and nuts *i, i'*, Figs. 5 and 7, instead of stitching. In the form shown in Fig. 5, bands *F* cover the nuts, and in the

form shown in Fig. 7 the nuts are enclosed between the two layers *k, l* of the flaps A. The ends of the top piece B are attached to the flaps A in a similar manner. The flaps are rounded and tapered off at the ends to a special shape. The loops H and terret rings are bolted through the top piece B, flaps A, and tree C, as shown in Fig. 5. The cantle D, Fig. 4, is also bolted on, the bolts *f, g* serving to hold the crupper ring *o* and bearing hook *h* respectively.

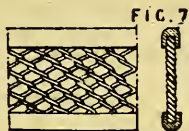
10,162. Gauttard, A. L. G. June 21.

Fallen horses, raising.—Relates to apparatus which may be attached to vehicles. The lever A is slung by means of a rope or chain F over a pulley D, carried by a jib fixed to the vehicle. The lever thus has a movable fulcrum whereby the leverage can be varied as the lever is turned.



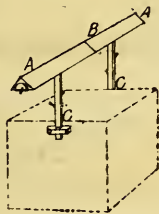
10,218. Notton, S. June 22.

Materials; bridles; traces; breeching; collars, neck; saddles.—Reins, traces, breeching, &c. are made of flat metal chain bands as shown, suitably bound at the edges or lined. The frames of the collar (which is in halves with a suitable hinge and catch), of the saddle, and the blinkers are of sheet metal, suitably lined.



10,330. Cleeve, F. J. S. June 25.

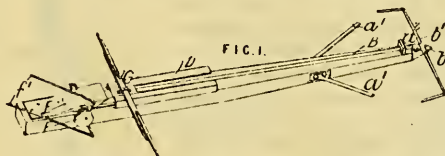
Stands for saddles. The top A of a saddle-rack is hinged at B, so as to form a box when closed up, into which the legs C may be put. The legs C may be attached to the saddle box shown in dotted lines, or to feet.



10,458. Kline, J. P. June 27.

Stopping runaway horses; bridles.—The Figure shows a perspective view of a pole fitted with the means for checking the horses. The pole cap *b*, breast pole *b'*, and whipple-tree G are carried by a rod B sliding in guides *a*² and D. On the rear end of the rod B is fixed a notched block engaged

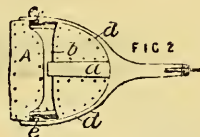
by a spring catch E, which can be raised by a cam F, actuated by straps *f'* controlled by the driver. Near the front of the pole are fixed check reins *a'*, attached to the bits. The driver by raising the



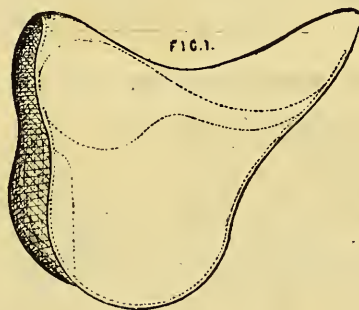
catch E leaves the rod B with the whipple-tree G and breast pole *b'* free to slide forwards, the check reins *a'* then become tightened, and the whole of the traction is thrown on to the bits.

10,482. Thompson, W. P., [Günzel, L.] June 28.

Spurs and spur carriers.—The spur, which is readily fitted and detached, has three arms *a, d, d*, of which the arm *a* fits centrally into the heel A, and the arms *d, d* carry pins *e, e*, which take into recesses in the grooved ends of a cross-bar *b* let into the heel.



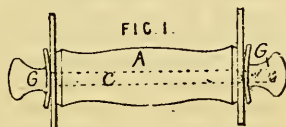
10,621. Edwards, E., [Cock, E. A. F. de.] July 1.



Saddles.—The leather part, Fig. 1, of military and other saddles is made by moulding a single piece of leather upon a mould of the required shape. This leather part or covering is then fixed to the saddle-tree.

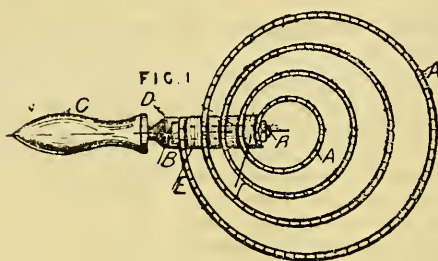
10,748. Wainwright, T. July 3.

Rein holders.—The reins are gripped between the handle A and knobs G, one of which screws upon a rod *c* passing through holes in the reins.



10,813. Pearce, W. G. July 4.

Bits.—The reins are attached to the loops h^1 on the sleeves s^1 , which are pulled down upon the cheeks S^1 against the spring n^1 to increase the leverage when the reins are very vigorously pulled. In a modification, the cheeks S^1 are slotted tubes and the springs work within them.

**11,002. Alexander, T. H. July 9.**

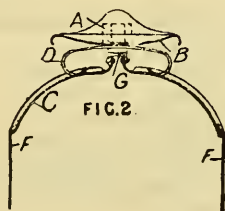
Currycombs.—The blade A consists of a coiled serrated strip or serrated strips forming concentric rings. The strip or strips are held by a bolt with washers E to the piece D forming part of the handle C.

11,170. Kimberley, W. July 11.

Horse clippers and the like.—The Figure shows a longitudinal section of clippers for cutting human hair. A guard plate a , toothed in its front bent part, is fixed by a screw at g , and regulated by a bolt e and milled nut f , according to the length to which the hair is to be cut.

**11,229. Timmins, E. P. July 12.**

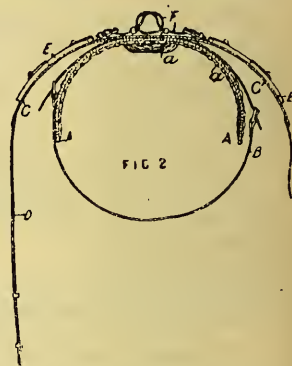
Saddles.—Riding, harness, and pack saddles are made with air spaces between the upper and lower parts, with or without ventilating-corrugations in the lower parts, and with a bridge-shaped top so as not to bear on the animal's backbone.



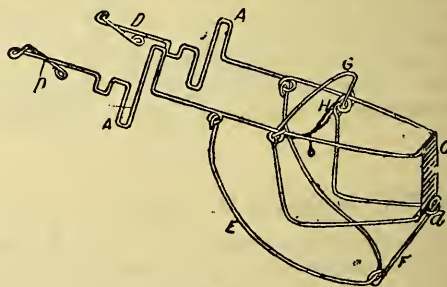
The Figure shows a riding saddle in transverse section. The sheet-metal plates C, provided beneath with ventilating-corrugations (not shown), are riveted to the saddle backbone G, and carry leather flaps F, F. The seat B is hinged at the pommel A to the saddle backbone G, is supported in the middle by the plate spring D, and is held down at the cantle by a chain.

11,360. Orred, S. July 15.

Saddles.—The saddles are mainly for transporting medicines, bandages, splints, &c. on the backs of dogs or other animals in time of war. The padded part A with the upper part a is secured by the girth B. The flaps C, carrying straps F for splints &c. and pockets E for medicines &c. are fixed to the part A, and are held down by the bellyband D. Breast and neck straps also keep the saddle in position. When used by sledge dogs &c. the saddle may be attached to the traces and be provided with terrets.

**11,892. Cole, G. July 26. Drawings to Specification.**

Saddles.—Spring seats or surfaces for saddles are formed from steel or other sheet metal stamped in one or more pieces, padded and covered if desired, and attached by nails through flanges on the plates or otherwise.

12,143. Cornish, K. H. July 31.

Muzzles for animals.—The muzzle, which, with suitable modifications, may be used for dogs, cats, goats, hogs, camels, and human beings, is made of

wire, preferably "aluminized," bent as shown. The wire A, formed with clips D for the collar and for additional cords if necessary, runs parallel to the teeth of the upper jaw and supports a plate C in front. Addresses or advertisements may be printed upon the front plate of the muzzle. The animal can eat by lowering its head, when the wire E falls forwards and the bar F slides through the loop *d*. The wire G passes over the snout or bridge of the nose, and the cord H (when suitably lengthened) is passed under the lower jaw to control the extent of its movement.

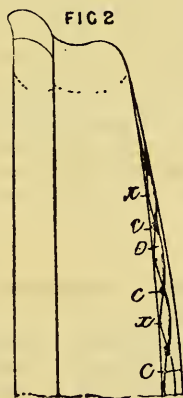
12,171. Wenman, F. H., and Betteley, H. July 31.

Collars, neck.—The collar, shown in transverse section, consists mainly of two india-rubber tubes A, B of suitable shape open to the air at the top, and connected by a tube at the bottom, or open there also. These tubes are suitably padded and lined.



12,316. Angel, W. J. Aug. 2.

Collars, neck; saddles; stuffing-materials.—Granulated cork, enclosed in a light canvas cover, is used as a padding-material for collars and saddles. For the lining C any suitable material that will stand washing and cleansing is used. It is attached by hooks *x* and eyes *c*, which engage directly at the front edge of the lining, and at the back edge are laced together by a cord D.

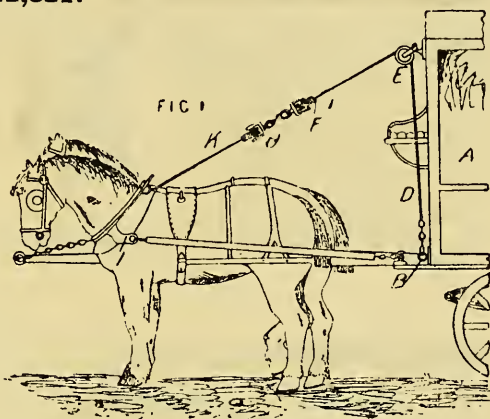


12,321. Kipling, E., and Walker, C. Aug. 2.

Preventing horses from falling.—A rope D attached at the ends to hooks B passes over the pulleys E fixed to the vehicle and over the pulley F¹ to which a second pulley-block J is swivelled. A rope K attached at the ends to the horses' harness passes over the pulley J. Should one horse stumble it is supported by the other and by the rope D.

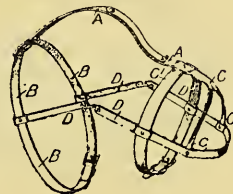
(For Drawing see next column.)

12,321.



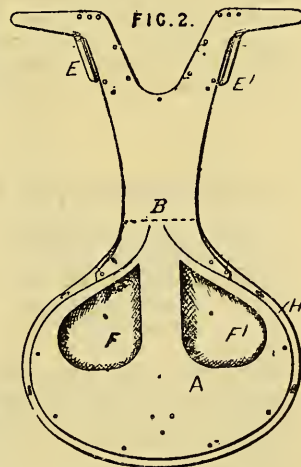
12,545. Northam, W. G. Aug. 8.

Muzzles for animals.—Relates to dog muzzles adapted to enable the dog to drink and pick up pieces. The head strap A is made stiff and elastic by a flat spring, and is looped for attachment to the collar B and the adjustable chin band C¹ of wire, leather, &c. The strap A is split in front and attached to the nose piece C, which is connected to the collar B by loosely-jointed side pieces D of metal, leather, &c.



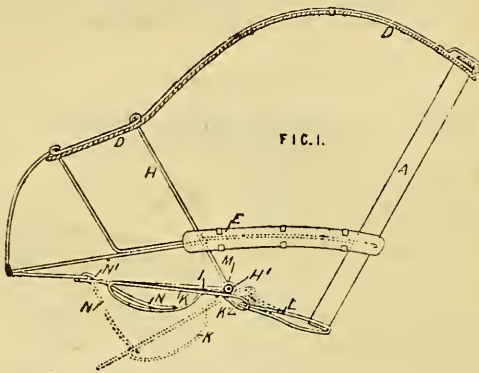
12,854. Newton, H. E., [Walsh, T.] Aug. 14.

Saddles.—The saddle-tree A, B is stamped with the saddle-bars E, E¹ in one piece of sheet metal. It is shaped with depressions F, F¹, which are afterwards filled with rubber &c.; holes are made for attaching the leather covering, and the plate is bent to the proper curved form. A metal under plate H may be attached, covering the seat A or the whole upper plate. This under-plate may be divided longitudinally into two plates to facilitate ventilation.



13,042. Edwards, J. Aug. 19.

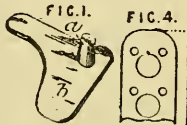
Brilles or headstalls with means for preventing destruction of clothing. The head-gear is for preventing horses from destroying their clothing, while allowing them to feed. A curved piece of leather *d* with or without a bottom of wire netting is held behind the lower jaw by suitable adjustable straps as shown.

**13,052. Symonds, J.** Aug. 19.

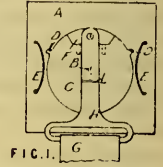
Muzzles for animals.—The muzzle is formed of a frame attached to the neck strap *A*. Tinned or galvanized wire is preferably used in front, and leather &c. or wire lined with leather at the back as at *D* and *E*. At the mouth there is a hinged plate *I* of wire netting or perforated metal. The wire *H* is fitted to the transverse wire *H¹* of the hinge, which is preferably controlled by a spiral spring *M* and is prevented from opening by a loop *N* hinged at *N¹* and sliding on the loop *K, K²*. This hinged plate may be dispensed with, if the muzzle is made large enough to allow the animal to open its mouth. There is a leather loop *L* between the strap *A* and loop *K²*.

13,192. Nicholls, F. V. Aug. 21.

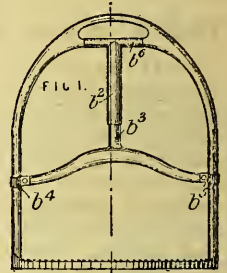
Stirrup straps, suspending, safety saddle-bars for. A perforated plate, Fig. 4, is fixed to the stirrup strap and fits over the peg *a*, Fig. 1, in the plate *b* fixed to the saddle-tree. This peg fits into a hole in the saddle flap, and thus the stirrup strap is only released when a fall occurs and the leg ceases to press upon the flap.

**13,245. Alderson, E.** Aug. 22.

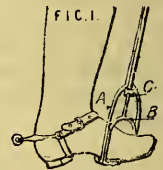
Stirrup straps, suspending, safety saddle-bars for. The stirrup leather *G* is attached to a bar *H*, which is hinged at *L*, and pivoted at the top to a piece *F* which has pins fitting into holes in the disc *C*. This disc is pivoted at *B* to the plate *A*, and is provided with lugs *D* which press aside one or other of the springs *E, E*, when there is a sufficient strain on the stirrup leather, in an oblique direction. The rotation of the disc allows the piece *F* to be pulled away, thus freeing the stirrup leather. In a modification, the stirrup leather may be attached to a pin at the top of the disc *C*, or the disc may be replaced by a piece with a quadrant-shaped groove, in which a ball is kept by means of springs, which, when overcome, permit the escape of the ball together with the attached stirrup leather.

**13,306. Barker, G.,** [Peterson, W. H.] Aug. 23.

Stirrups, safety. A safety inner bow or cross-bar, pivoted at *b⁶* and provided with spring clips *b⁴, b⁵*, is made adjustable in height to suit different feet. The part *b³* may screw into the sleeve *b²*, or into a loose nut thereon, or may have a series of holes for a set-screw, or the part *b⁶* and the cross-bar may be connected by pivoted cross-bars.

**13,337. Edwards, E.,** [Belloni, L.] Aug. 23.

Stirrups, safety. An inner bow *B* is hinged at *C* to the large outer bow *A*, and is held in the position shown by two small projections. If the rider is thrown, the bow *B* turns on its hinges and frees the foot.

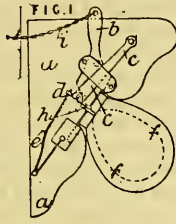
**13,394. Barnett, L.,** [Curtis, D.] Aug. 24.

Saddles.—Gig harness and riding saddles are fitted with zinc plates or linings to prevent or cure sore backs. The Figure shows a pair of dished plates *a¹, a¹* fitted to a harness saddle.



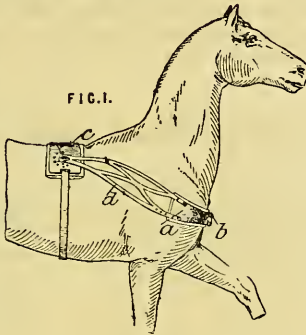
13,498. Peltzer, F. Aug. 27.

Bridles with means for blindfolding horses. The flaps *f*, by which the horse is blindfolded when restive, are pivoted to plates *a* fixed to the blinkers, and are operated through levers *b*, *c*, *d*, *h* against the spring *e* by a chain *i* and cord. This cord passes over a roller kept in place beneath the saddle hook by a spring bolt until pulled firmly by a cord passing from the roller to the driver.



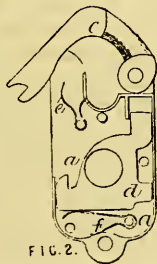
13,508. Mendel, A. Aug. 27.

Collars, breast.—A breast collar or substitute for the ordinary horse &c. collar consists of a suitable plate or frame *a*, *d*, preferably hinged at *b*, which is adjustably connected in the rear to a saddle *c* or like part held by a bellyband. The upper part *d* of the frame may be connected by an arched piece passing freely over the neck of the animal to prevent the frame from yielding.



13,609. Shepherd, F. Aug. 29.

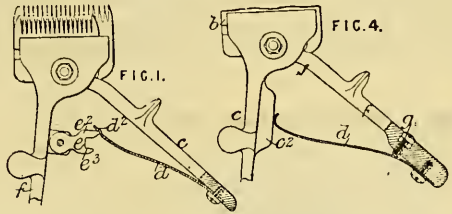
Fastening traces, pole-chains, and harness breeching. Relates to a slip-hook consisting of a casing *a* to which is pivoted the arm *c* and in which slides the piece *d* urged forwards by the spring *f*. A hole in the piece *d*, registering with a larger hole through the casing, is made for the insertion of the finger to draw back the piece *d* and so release the arm *c*, which is urged outwards by the spring *e*.



3,797. Burman, W., and Burman, W. H., [trading as Burman & Sons]. Sept. 2.

Horse clippers and the like.—Relates to hair clippers, more especially toilet clippers, and consists in means for adjusting the tension of the opening-out spring. The spring *d*, Fig. 1, fixed to the lever *c* which operates the movable cutting-plate *b*,

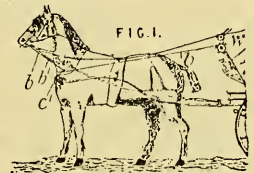
is formed with an indented end *d*², which receives one of the projections *e*² or *e*³ on the fulcrum *e* pivoted on the fixed lever *f*. These projections are of different lengths, and there may be any



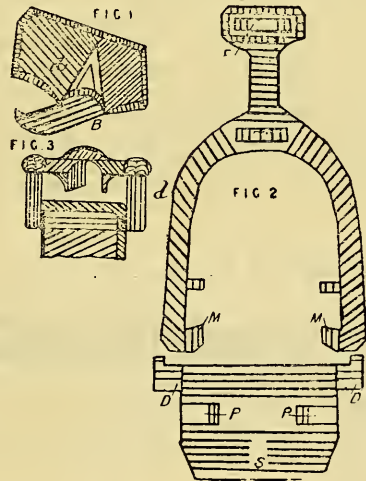
suitable number of them. In a modification, the end of the spring *d* takes into one of a number of notches in the fulcrum which are at different distances from the pivot. In another form, Fig. 4, the spring *d* has a sliding bearing on *c*² and the tension is adjusted by a screw pin *g*.

13,821. Milchsack, C. G. Sept. 2.

Bridles; rein-holders; stopping runaway horses.—A separate pair of reins *b*, *b*¹ passes from the bit through rings *c*¹ on the collar to a winch *w*, which may be worked by hand or foot.



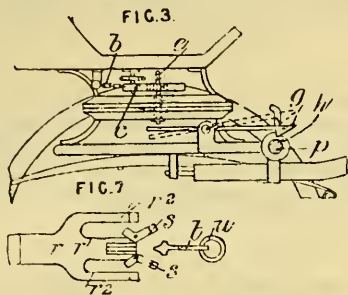
14,039. Murphy, P., and Murphy, T. Sept. 6.



Stirrup straps, suspending, safety saddle-bars for. The saddle-bar consists of a bracket *a*, Fig. 1, formed behind with a block to fit to the ordinary saddle-bar, and in front with an inclined bar or projection *B* upon which is hung a frame *d*, Fig. 3, from which the stirrup strap is suspended. A spring may press the frame to the bar. If a fall occurs the frame leaves the bar *B*.

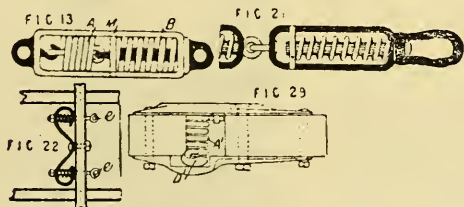
Stirrups.—The detachable tread S is fitted to the bow, Fig. 2, by the projections P, P, which rest upon the projections M, M and the lugs D, D which lie beneath catches urged downwards by spiral springs or by a spring bow. The stirrup strap is attached to the two eyes F, T. If a fall occurs the tread turns upon the projections P, P until it is free from the bow, when it falls away.

14,591. Fuchslocher, W. Sept. 17.



Runaway horses, releasing; fastening traces, pole-chains, &c. The draught-bar *p*, Fig. 3, which carries the trace fastenings, is mounted to rotate in bearings, and is fixed by a catch *g* engaging a notched disc *h*. The inner end of the lever *g* can be depressed by a screw *e* passing through the centre pin of the forecarriage and actuated by a nut formed as a pinion engaging a rack *c*. For releasing the horses the rack *c* is moved by a chain *b* which is pulled by the driver or by a passenger. The screw *e* is thus lowered and disengages the catch *g*, allowing the draught-bar *p* to rotate until the traces slip off their fastenings. Fig. 7 shows the fastening for the pole-chains. The chains are passed over the prongs *r*² of the fork *r*, and are secured by lever catches *s*. When the traces are released the pull of the chains on the catches *s* cause them to open as shown, thereby releasing the chains. When leader horses are employed, their harness is attached to a ring *u* the stem *t* of which is secured in the prong *r*¹ by the catches *s*, so that, when these latter are released as described, the leaders will also be released.

14,622. Hill, C. A. Sept. 17.



Fastening; dog leaders.—Relates to helical spring appliances for backbands, traces, hames, breeching, pole-chains, &c. or vehicles to lessen the shocks of starting &c. and for dog chains &c. Fig. 13 shows one form in which two springs are used, one A in extension and the other B in compression, divided by the sliding nut M fixed to the

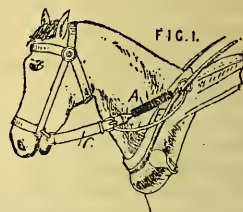
draw-bar. Fig. 21 shows a spring link of a chain with a single helical spring. Fig. 22 shows combined plate and helical springs for traces which are attached to the eyes *e* of the draw-bars. Fig. 29 shows another form of spring trace hook. A helical spring A' is coiled upon the axis of the hook D', the ends of the spring bearing against stops on the hooks and case respectively. Other forms may be used, in most of which either single helical springs may be employed or springs used both in extension and compression, as in Fig. 13, and the frame may be open or closed, formed with fixing-lugs in different positions, &c.

14,837. Smith, C., and Bown, G. F. Sept. 20.

Collars; linings.—Collars are lined with sheet india-rubber, strengthened where stitched on by a canvas or other backing. The Provisional Specification describes the use of ventilating-tubes beneath the lining.

15,154. Kinloch, S. G., and Wilcock, J. Sept. 26.

Bridles.—The bearing rein is made elastic throughout or in part. The Figure shows one form, in which a helical spring A forms part of the bearing rein C, its extension being limited by a cord F. The helical spring may be enclosed in a case, and be used in extension or compression. India-rubber may also be used.



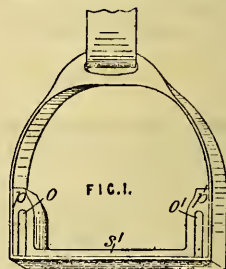
15,227. Sutter, A., [Jaeggli, J.]. Sept. 27.

Drawings to Specification.

Rein-holders.—The invention consists of an automatic brake applied by the sliding of the body on the undercarriage in descending an incline, the brake blocks being applied by suitable mechanism to the hind wheels only, or to the front and hind wheels. The reins, in the absence of the driver, may be attached to a lever connected with the brake mechanism, so that any pull of the horses tends to apply the brakes.

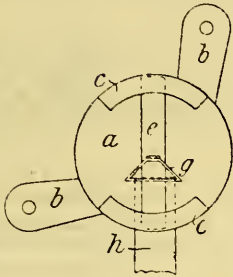
15,231. Smith, E. Sept. 27.

Stirrups.—The tread and part of the legs is lined with india-rubber &c. *s*¹, *p*, *p*¹, preferably slotted at *o*, *o*¹, to prevent the foot from slipping.



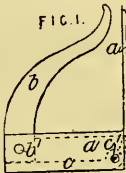
15,260. Ashford, W. G., [Christie, R.]. Sept. 28.

Stirrup straps, suspending, safety saddle-bars for. The stirrup leather *h* is suspended from the link *g* hinged to the centrally-pivoted cross-bar *e*, the ends of which catch beneath circular flanges *c, c* upon the plate *a*, which is secured to the saddle-tree by screws through the lugs *b, b*. If a fall occurs, the cross-bar *e* pivots on the plate *a* until free from the flanges *c, c*, when the stirrup leather becomes detached.



15,347. Hooper, S. Sept. 30.

Fastening, slip-hooks for. Relates to a safety fastening for horses or cattle. The tongue *b* is pivoted at *b'* to the part *a* provided with a back plate, and bears against a spring *c* pivoted at *c'*. The tongue may be pivoted at *c'* and the spring be arranged behind the back plate *a*.



15,818. Boulton, A. J., [Baker, J. S.]. Oct. 8.



Fastening hames, hooks for. The ends *E, E'* of the hames are engaged by hooks *D, D'* on a forked piece *A* and a notched arm *C* respectively. The piece *A* is cast around a forked lever *B* (shown dotted), which is pivoted to it at *G*. To secure the fastening, the lever *B*, occupying a vertical position, is made to engage by a pin *F* with one of the teeth *I* on the arm *C*, and is then turned upon its pivot *G* until its end *O* is engaged with a spring, and the arm *C* abuts against the cross-bar *J* on the piece *A*.

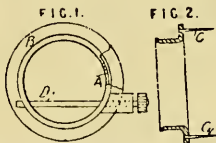
16,284. Uffhausen, A. Oct. 16.

Bits.—The bit is for restive horses, and consists of two bars *b* carrying rein rings *c* at one end, and similar rings *d* at the other which slide upon the bars *b* and are secured to the check straps. On pulling the reins firmly the bit opens out and assumes a ∇ form.



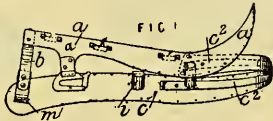
16,714. Patterson, J., and Donovan, J. W. Oct. 23.

Muzzles for animals.—Relates to ferret muzzles. Fig. 1 shows a back view of the muzzle, and Fig. 2 a section. The muzzle consists mainly of the ring *A* flanged at *B* to hold needles *C*, which project slightly beyond the nose and serve to urge the rabbit forwards and to prevent the ferret from coiling itself up and going to sleep. The muzzle is secured to the nose of the animal by either one or two spring pins *D* which are passed behind the fangs.



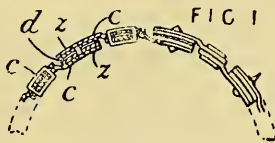
17,076. Christophe, J. Oct. 29.

Saddles.—The seat *a* of the saddle-tree is riveted &c. to the U-shapedommel piece *b*, which is connected with the side plates *c* directly or by pieces *m*. The side plates *c* are prolonged at the rear, and bent over and riveted to the seat *a* to form a spring cantle. A strengthening-plate *c'* or a flat or coiled spring may be fixed at this part, and rubber blocks *i* may be added. The seat *a* is thus raised well above the back of the horse, ensuring ventilation.



17,138. Boyères, F. C. de. Oct. 29.

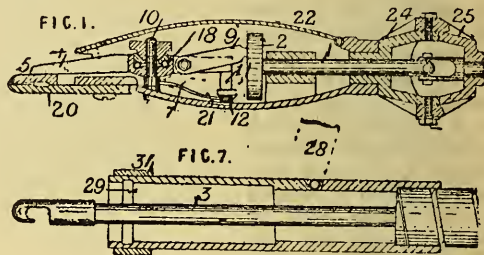
Dog collars; muzzles for animals; bridles; electric harness.—Relates to electric appliances in the form of rings, which are applicable for use as or in connection with collars, muzzles, reins or bridles, harness, &c., for preventing rabies in domestic animals. The Figure shows a portion of such a ring adapted to form a collar for a dog or cat. It is built up of a number of galvanic couples *c, z* separated or not by absorbent material *d* for retaining an exciting liquid, and either insulated from each other or connected together in series or parallel by metallic links or by other means.



17,270. Silver, W., and Cohen, N. Oct. 31.

Horse clippers and the like.—A longitudinal section is shown. The working parts are enclosed within a casing formed of a plate *21* and a hinged cover *22*. A fixed comb cutter *20* is screwed to

the plate 21. A working cutter 5 is carried by a lever 4 swivelling about a pin 10. Ball bearings 18 are placed between the lever and the nut which foot 11 which rests on a roller 12 at the end of an arm swivelling beneath about the pin 10. A connecting-rod 9 hinged to the lever ends with a ball-and-socket joint in a crank disc 2 at the end of a driving-spindle 1. Power is transmitted to the spindle by flexible shafting ending in a universal joint. The joint is contained in a case formed of two jointed collars 24, 25. The flexible shafting is made of catgut sections 3 joined by hooks and eyes. It is protected by a flat helix. The driving-end of the helix is provided with a tube having a groove 29 to fit a collar on the spindle of the clipper. A ring 31 and latch 28 ensure firm grip.



17,572. Tehnik, A., and Vavra, F. Nov. 5.

Fastening traces, bands, &c., friction grip couplings for. The ends of the trace &c. are clamped by means



of wedges *c, c* in the sheath *a*, which is formed with taper flanged sides. The ends of the parts to be joined may be laid one over the other, and a single wedge employed, or one end may be secured to the sheath by means of a rectangular loop.

The screw *s* can be locked to a cover *u* which protects the parts. A spring *t* beneath the lever prevents jarring.

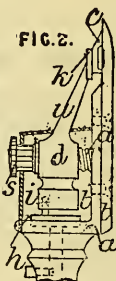
17,887. Close, F. A. Nov. 9.

Saddles, harness. Each panel consists of two boards *A, B*, the lower of which is rounded and padded and connected by springs *D* to the upper one. The panels are covered with leather and attached by bolts &c. to the saddle-tree.



17,645. Burgon, C. Nov. 6.

Horse clippers and the like.—An angle plate *a* secured to a handle carries a fixed comb plate *b* and a fulcrum pin for a lever *d* which works a reciprocating comb *c*. The lever is actuated by a crank *h, i* at the end of a spindle through the handle connected by flexible shafting with a motor. The comb *c* is engaged by two pins projecting from a plate *k* at the end of the lever. A pressure spring is placed between the comb and plate, and its tension is varied by a screw *s* on the fulcrum pin.



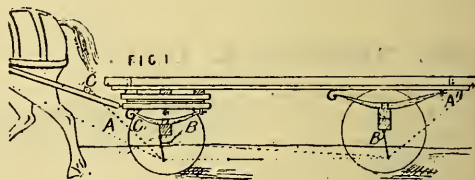
18,194. Biebuyck, G. Nov. 14.

Stirrup straps, suspending, safety saddle-bars for. The stirrup leather is suspended from a piece *E*, which is provided with a button *F*, the shank of which rests in a notch *B* in the block *A*, and is kept in place by a spring *D* attached to the block *C* on the base-plate *X* which is fixed to the saddle-tree. Any backward, forward, or upward jerk on the piece *E* causes it to become disengaged. The blocks *A* and *C* may be shaped to prevent disengagement by a forward pull, if desired.



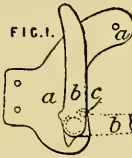
18,244. Cooper, W., and Holdsworth, J. Nov. 15.

Traces.—Relates to gear for aiding in starting and drawing vehicles. The Figure shows the application to a wagon, but the invention may also be applied to tramcars, omnibuses, sledges, and other vehicles. A chain is attached as at *A*¹¹ to the back of the vehicle, passes under struts *B*, and is either led upwards as at *A* to the collar or other part of the harness or motor, or passes over a pulley *C* on the shaft before it is attached to the harness. The weight is thus thrown on to the hinder part of the vehicle, and the grip of the horse on the road is increased. Pulley tackle or levers may be inserted in the chains to increase the effect.



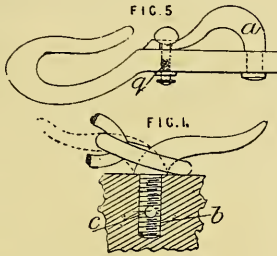
18,575. Nicholls, F. V. Nov. 20.

Stirrup straps, suspending, safety saddle-bars for. Relates to improvements on the invention described in Specification No. 3250, A.D. 1883. The pin *c*, which passes through the plate *a* and bears against the pivoted bar *b*, is controlled by a spring which is arranged at the back in a vertical position, so that the bar may be fixed nearer the point of the saddle-tree.



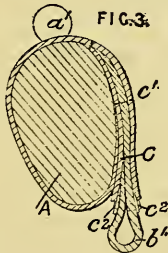
18,580. Markham, R. J. Nov. 20.

Fastening traces and pole-chains, slip and other hooks for. Fig. 1 shows a form of hook for traces or pole-chains, and Fig. 5 a double hook for supporting the shafts of a road vehicle. The stem *b* of the hook, Fig. 1, is plain or screwed as shown, and is held in position by a spring bolt or special key fitting into the hole *c*. For releasing the trace &c., the key is pulled out and the hook turned as shown in the dotted lines. In Fig. 5 the point of the hook *a* is slotted and recessed so that it may be held by the head of the screwed pin *q*.



18,644. Mountford, G. M. Nov. 21.

Collars, neck; fastening traces, loops for. The Figure shows a transverse section through a horse collar. No hames are used, and the trace attachment consists of a leather loop *b*¹ strengthened by a rivet *c*², and stitched between the two leathers *C*, *C*¹ of the afterwale *A*. This strap embraces a ring &c., to which the trace is directly or indirectly attached. The forewale *a*¹ is made smaller than usual, and the hame groove in ordinary collars is filled up.



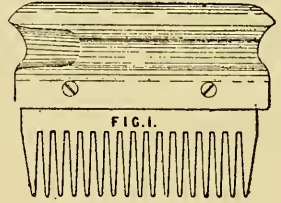
18,842. Berry, G. L. Nov. 23.

Collars, neck; saddles; linings. — Harness collars, as shown in the Figure, and saddles or pads, are lined with corrugated cork, preferably covered with leather &c. with an interposed layer of caoutchouc.



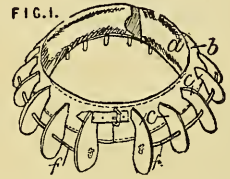
18,912. Eggleton, F. A. Nov. 25.

Combs for dogs, the manes of horses, &c. are provided with handles as shown, to enable them to be more firmly held.

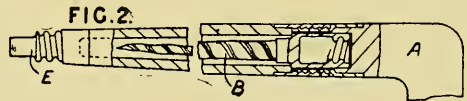


18,977. Baumbach, A. Nov. 26.

Interfering rings.— Two strips of leather *a*, *b* are sewn together so as to enclose a space between them, and strips of leather *c* connected by a cord *f* are fixed in slots in the outer leather *b*.



19,102. Young, J. F. Nov. 28.



Whips.—The lash or switch *B* of a dog or riding whip is enclosed in the hollow stick of an umbrella, or within a walking-stick, and may be fixed to the detachable handle *A* of the stick, or, in the modification shown, it may be attached to the ferrule *E* of the stick by means of a screw joint.

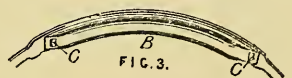
19,210. Morris, A. H. Nov. 29.

Saddles. — The tree is formed with looped "points" *A*, *A*. The crupper loop *D* is hooked to the tree and brazed thereto. The saddle-bars *E* are attached by an iron band *B* and by a double-headed U-shaped rivet *C*, and are formed with a hole *E* for a rivet which attaches the flap on the outside of the "point" and the strap on the inside.



19,360. Wenman, F. H., and Betteley, H. Dec. 2.

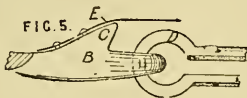
Pads for riding and other saddles, breast and other collars, knee-caps, bridles, and breeching and harness



straps generally are made of rubber, with or without zinc &c. to stiffen it, and with holes for the passage of air. The Figure shows a pad B for a breast collar; C, C are the openings for the air.

19,395. Entwistle, A., and Farnworth, W. Dec. 3.

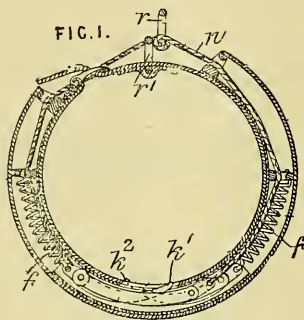
Collars, neck, hame tugs for. The hame tug B is formed beneath with a projection C, with or without a plate E, to prevent the injurious friction of the trace loop D against the collar.



19,546. Schneider, A. Dec. 5.

Dog &c. collars.

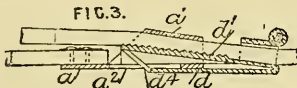
—The collar, which is for use in training dogs and other animals and for sporting purposes, consists of an open metal tube covered with leather and enclosing jointed clutches k^1, k^2 which are controlled by springs f, f and by a cord n passing through the ring r to which the lead may be attached. If the animal pulls violently the cord n is strained and causes the clutches k^1, k^2 to protrude from slots and grasp the animal's neck and thus restrain it. By fastening the lead to the second ring r^1 , the controlling-mechanism is rendered inoperative.



19,591. Tèchnik, A., and Vávra, F. Dec. 5.

Fastening traces.

Relates to buckles or fastenings of the kind described in Specification No. 17,572, A.D. 1889. The sheath a^1 has an inclined upper surface and a tail a for connection to one end of the strap &c.; the other end is clamped between the sheath and a serrated wedge d bent up from sheet metal and formed with a guide d^1 and a tail d^2 entering a slot a^2 in the sheath. In a modification, the wedge is arranged to embrace the upper part of the sheath.



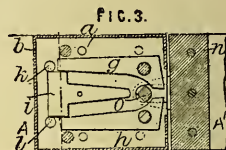
19,701. Zuccarelli, A. M. Dec. 7.

Bridles, blindfolding-appliances for. Restive or runaway horses are restrained by blindfolding them by a veil V, which when folded is lodged in a box on the frame E attached to the brow band. The front of the box is opened by a cord x , which thus allows the veil to fall out. Cords q, y and springs in the band o ensure the proper position of the veil.



19,747. Fischer, G. Dec. 9.

Fastening straps &c., slipping-devices for. To the end A of the band is riveted a casing a, b ; to the other end A' a block n having a tongue carrying the stud O, which



is retained in the position shown between the heels of a pair of levers g, h . These are locked by means of a T lever i pivoted at k, l and lying between their tails, but the contact-surfaces are bevelled so that the pull upon the fastening tends to turn the T lever up and thereby free the levers g, h . This tendency is resisted by a stud on a hinged lid at the top of the casing. This is locked by a sliding catch, and can be liberated by means of a string.

19,789. Rippke, H. Dec. 9.

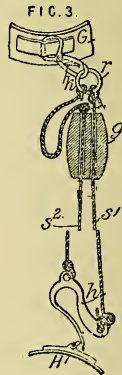
Fastening traces, slip-hooks for. Consists of a spring coupling for attaching traces, whipple-trees, &c. to vehicles. The spring G surrounding a bolt H is enclosed in a frame A, the open end of which can be closed by a hook D engaging the part C and secured by a sliding catch N. The parts to be connected are attached respectively to the hook D and to an eye K on the stem H.



19,837. Schneider, A. Dec. 10.

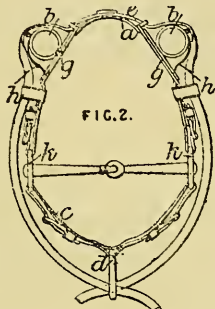
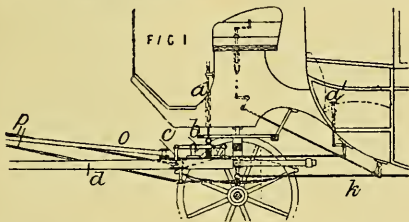
Dog leashes.

—The hook h for the collar H is pulled up so as to release it, as shown, by a separate cord s^2 , operated by a block g , which slides freely on the other cord s^1 . Both cords are attached to a ring r , held by a snap-hook k to the sportsman's belt G.



20,208. Carlstedt, J. H., and Malmqvist, C. P. Dec. 16.

Bridles.—Runaway horses are controlled by a special nose-band *e* which closes the mouth and forces rollers &c. *b* against the nostrils. The rollers *b* are supported by springs *h* and guided by metal frames *g* carried by the strap *a*, which passes over the nose of the animal, and is secured to the bit rings *k*. The strap *e* also passes over the nose of the animal and through the ring *d* supported from the bit rings by the strap *c*.

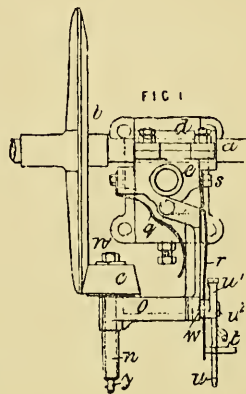
**20,519. Geiersbach, F.** Dec. 20.

Runaway horses, releasing.—The pole *d* fits into a socket on the underframing, and is retained by a bolt *c* attached to a lever *b* which can be actuated for raising the bolt (and so releasing the pole) by the driver by means of a vertical push-rod *a*, or by the passengers by means of the push-rod *a'*. The roller bolts for the traces *o* are carried by the pole, so that, when the latter is set free, it can move outwards from the vehicle.

20,749. Wolseley, F. Y. Dec. 24.

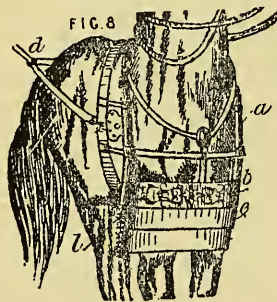
Horse clippers and the like.—Relates to apparatus specially applicable for imparting motion to flexible shafting for driving sheep shearing and clipping apparatus. The driving-shaft *a* carries a bevel

friction-wheel *b*, gearing with a pinion *c* on the spindle *n*, which is connected to the flexible shaft by a bayonet joint *y*, provided with a locking-spring, and is journalled in the bracket *o*. This is pivoted on the bearing *d* of the main shaft, and, in consequence of its form &c. and the action of the spring *q*, tends to fall away from the wheel *b*, keeping the pinion out of gear. The pinion is pressed into gear or liberated by means of a three-armed lever *u*¹ pivoted at *u*², from the horizontal arms of which hang cords or rods. The vertical arm *u* is slotted to engage with a pin *t* on a spring *r* pivoted at *s*, which can then be moved into or out of contact with the bracket *o*, to prevent accidental displacement; it has a projection *w* which enters a corresponding recess in the bracket.

**20,841. Boulton, A. J., [Auerswald, H., and Hoffmann, I.]** Dec. 28.

Stopping and controlling runaway and restive horses.

—Frightened or runaway horses are controlled by springing the steel plates *e* over the fore legs. These plates are drawn up beneath the plate *b* by means of a rack on the spring rod *l*, both of which slide in the tube *a*. The rack is operated by a pinion with suitable handle, and is held by a pawl which is released by pulling the strap *d* when it is desired to restrain the animal.

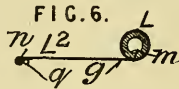


A.D. 1890.

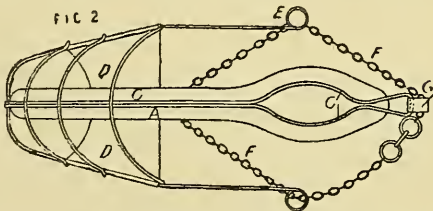
184. King, H. E., Stuart, J., and Christie, D. A. T. Jan. 4.

Collars, neck; saddles; pads. — Horse-collars and harness pads are made of a metal frame to which a spring cushion is attached.

This cushion may consist of a curved sheet-metal plate brazed at one edge to the frame, and left free at the other, or may consist of an inflated rubber bag loosely enclosed in a canvas bag, the compound bag being held to the frame by a leather casing attached by wire stitching. The Figure shows a section of the frame for a horse-collar. The fore-wale *L* is bent round a metal tube *m*, and the edge of the afterwale *L*² round a wire *n*. Eyes *q* and holes *g* are provided for the wire stitches. In harness saddles the frame is similar.

**290. Pirnie, G.** Jan. 7.

Whips. — The loop *C*, to which the snapper *F* is fastened, is strengthened by one or more strips *E*, *E* of skin, cloth, &c., one end of which is attached to the whip stalk *A* below the loop, or continued to form the usual lining or wrapping, while the other end extends beyond the loop, and is braided or otherwise secured to the snap.

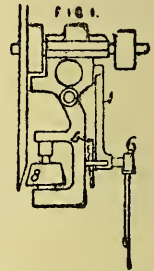
**328. Wade, J., and Gill, J.** Jan. 8.

Muzzles for animals. — The Figure shows a top view of a dog muzzle. A plate *A* passes from the nose to the top of the head, and along this plate

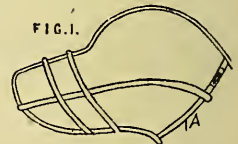
runs a doubled wire *C*, *C*, which carries a loop *G* and is separated at the nostrils, and after supporting the shield *D* for the lower jaw terminates in loops *E*, *E*. The muzzle is secured by a chain *F* which passes through loops *E*, *G* and a loop on the plate *D*.

456. Marshall, M. A., [Administratrix of *Marshall, E.*], and **Burton, C.** Jan. 10.

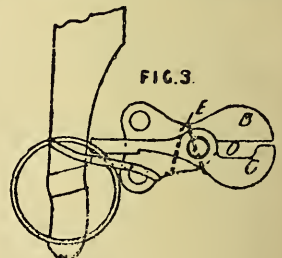
Horse clippers and the like. — Relates to friction gearing for driving sheep-shearing, horse-clipping, and other machines. The friction pinion *8* mounted on a swing frame is thrown in and out of gear by means of a cam disc *b* on a spindle, carrying a lever *6* with cords on a hand-wheel, and supported in a lever *1*.

**809. Lord, H.** Jan. 16.

Muzzles for animals. — A dog muzzle, including or excepting the collar *A*, is made of india-rubber &c., to prevent chafing.

**925. Mohrstadt, G. W., and Oates, C. W.** Jan. 18.

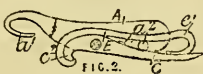
Fastening bridles, spring catches for. A fastening for bridles &c. is constructed with two arms *B*, *C* pivoted together to form a divided loop or eyelet *O* with which a stud engages. One arm is rigidly secured to one of the parts to be fastened



and the other arm is provided with a tail. A spring E retains the fastening closed. Where several fasteners are employed they may be actuated simultaneously by a sliding rod with suitable catches. The Figure shows the end of the sliding rod with means for actuating a reversed fastening.

1205. Fellows, A. Jan. 23.

Fastening hames, hook couplings for. One hame is attached to the hook a^1 on the piece A, between the sides of which is pivoted the lever C provided with a hook c^2 for engaging the strap E to the other end e^1 of which the other hame is attached. The pivot of the lever C consists of a thumb-screw which may be inserted in any one of a series of holes a^2 according to the width of the collar. To fasten a pair of hames, the lever C is first placed in a vertical position and after the strap E has been hooked over the ends c^2 is then turned into the position shown.

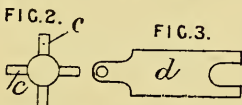


1324. Evans, E. Jan. 25.

Muzzles for animals.—The frame of a dog muzzle may be partially or entirely enclosed in rubber tubing, and in some parts the rubber only may be used.

1337. Burgon, C., and Marshall, M. A., [Administratrix of Marshall, E.]. Jan. 25.

Horse clippers and the like.—Relates to flexible shafts for driving sheep shearing, horse clipping, and other machines. The core consists of links d connected by centre-pieces with pins c , forming together a series of universal joints. In a modification, the links are bent up from a star-shaped piece of sheet metal.

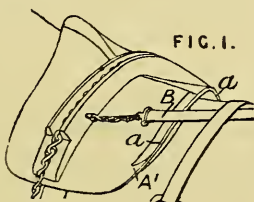


1370. Wolseley, F. Y. Jan. 25. *Drawings to Specification.*

Horse clippers and the like.—Horse clippers, sheep shears, and the like are formed with holes or notches for the reception of arms on a special holder employed while sharpening them.

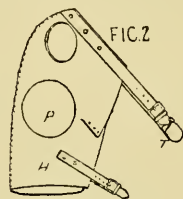
1373. Ritchie, J. Jan. 27.

Saddles.—To prevent the wear of the back part A^1 of cart saddles by the friction of the crupper attachments B, plates a of metal, hard wood, &c. are secured to the saddle by screws.



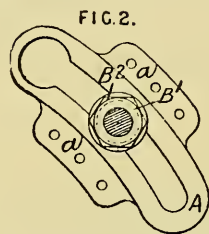
1448. Graham, D. Jan. 28.

Bridles, blindfolding-attachments for. Blind hoods for horses have the eye shields P formed in a piece with the body of the hood H by a blocking process. These shields are lined with gutta-percha &c. The throat latch T is elastic, being formed of rubber or a helical spring &c.



1511. Streeten, C. P. Jan. 28.

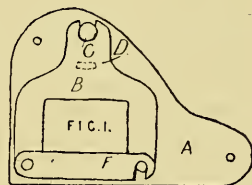
Saddles.—The leaping head of a lady's saddle is adjustably fixed by a curved frame A provided with flanges a, a , by which it is attached to the saddle-tree. This frame is slotted, as shown, to engage with the flanged end B^1 of the leaping head, which is secured in place after it has been slid into position by means of a nut B^2 .



1787. Harries, T. D., and Davis, G. Feb. 3.

Stirrup straps, suspending, safety saddle-harns for. The stirrup strap is attached to the latch F hinged to the forked piece B, which has a curved groove to engage with the projection D, and embraces the stud C.

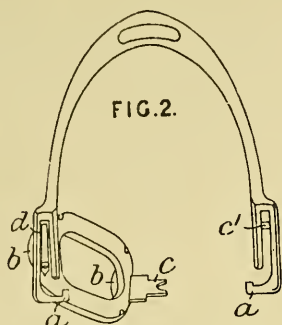
The projection and stud are formed on the base-plate A attached to the saddle-tree. If a fall occurs, the piece B pivots on the stud C until it is freed by the disengagement of the projection D from the above-mentioned groove. The latch F may also open and free the stirrup strap. According to the Provisional Specification the above-mentioned groove and projection may be replaced by a curved ledge on the plate A, in which the lower end of the piece B slides, and the latch F is replaced by a fixed loop.



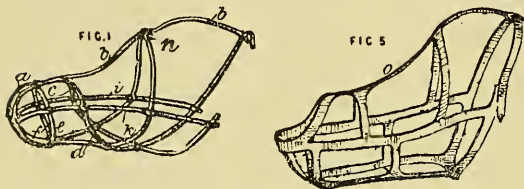
1835. Wheeler, H. B. Feb. 4.

Stirrups, safety. The tread is formed with curved grooved pieces b, b , adapted to slide upon the lugs a, a , and one end of the tread is hinged to a piece pivoted at d , while the other carries a fork c to engage with a pin c^1 on the stirrup leg. If the

rider is thrown, the stirrup opens out, as in the Figure.



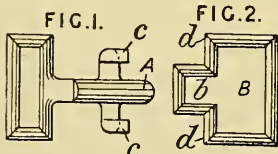
2007. Garstin, A. Feb. 6.



Muzzles for animals.—Dog or other muzzles are wholly or mainly made of one piece of leather, celluloid, &c., cut or stamped out and then bent to shape. In the form shown in Fig. 1 a piece of leather is cut out, which is like a triangle, from the sides, apex, and base of which spring two, three, and four parallel straps respectively. When bent to muzzle shape the triangle *a* is situated near the nose, the two side straps *i, k* pass horizontally, the middle strap *b* of the group of three above mentioned passes over the head, while the other two *c, d* pass downwards and cross at the throat, and, lastly, of the group of four straps above mentioned, the outer two *e, f* encircle the jaws, while the inner two run upwards and join at *n*. Where the straps cross they are riveted &c. together, one passing through the other if preferred. In the form shown in Fig. 5 a reticulated piece of leather &c. is stamped out, and afterwards bent along its median line *o* and joined below in any similar way.

2049. Horn, W. W., [Bates, I. W.]. Feb. 7.

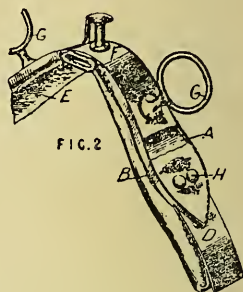
Fastening traces, clothing for animals, &c., hooks and eyes for. A fastening for horse blankets, traces, &c. consists of a hook A, Fig. 1, provided with side hooks *c, c*, and of an eye B, Fig. 2. The part *b* of the eye



passes over the hook A and the part *d, d* passes beneath the hooks *c, c*, which thus prevent accidental unfastening.

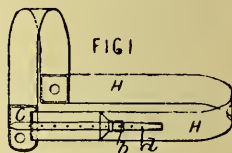
2196. Lavender, G. L. Feb. 11.

Saddles, harness. The saddle consists of a metal plate A with flanged edges B, and with holes for the terret rings G and screws H, which secure the pad E. Strips of leather D, F may be placed above and below the plate A as shown.



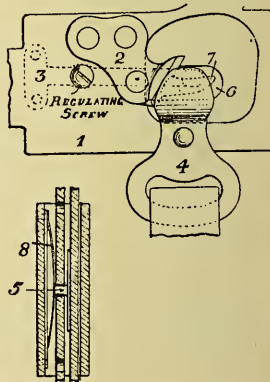
2403. Williamson, C. Feb. 14.

Halters.—The head strap H of web halters is made adjustable by passing it through a slotted piece C, and fastening it by a buckle *b* and strap *d*.



2565. Miller, W. J., [trading as Owen & Miller]. Feb. 18.

Stirrup straps, suspending, safety saddle-bars for. To a plate 1, recessed at 6, is fixed a bar 2 having a projecting pin 7, upon which hangs a loop 4 for the stirrup leather. The loop leaves the pin when the rider is thrown, but is prevented from coming off in other cases by a spring 3, the tension of which may be adjusted by a screw as shown.

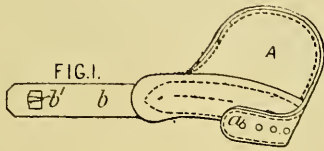


Fastening stirrup leathers. Consists of an open-ended case containing a bow spring 8, which keeps one of the holes in one part of the strap engaged with the pin 5 on the other part.

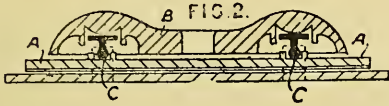
2651. Barnett, L., [Curtis, D.]. Feb. 18.

Horse-boots.—Ankle or fetlock boots A, made right and left for different legs, carry round their

lower part a bent metal strip covered with leather &c. *a*, in which there may be holes for a hook *b'* on the broad attaching-strap *b*.

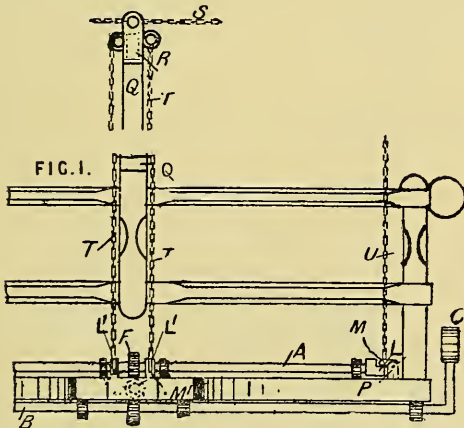


2686. **Bown, W., and Capewell, G.** Feb. 19.



Horse clippers and the like.—Relates to improvements in the invention described in Specification No. 1107, A.D. 1885, and consists in the use of one or more flat-headed pins or studs, or cone, triangular, or T-shaped pieces, or their equivalents, in combination with one or more convex, globular, segmental, or circular-shaped bearing surfaces or their equivalents for diminishing the friction on the cutting plate or plates, or on the pressure bar or its equivalent. The Figure shows in a sectional view such antifriction pins *C* arranged between the cutter plate *A* and the clamping-bar *B*.

2884. **Hall, H.** Feb. 22.



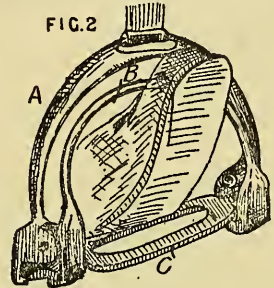
Runaway horses, releasing; fastening traces &c. Relates to means for releasing runaway horses and other animals from carriages and other road vehicles. The pole *Q* as shown, or the shafts of a vehicle, are fitted with a loose cap *R*, to which the pole-chains &c. *S* are fixed. The cap is held in place by chains *T*. The chains *T*, and also the chains *U* in the case of pair-horse vehicles, or the traces which may be used in place of them, are passed over pivoted hooks *M'*, *M*, which are held by catches *L'*, *L* on

the shaft *A*. This shaft is turned to release the hooks by means of a worm-wheel *F* and worm on a vertical spindle with a hand-wheel for the driver or by other equivalent mechanism.

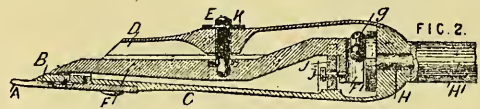
3002. **Weber, G., and Zachau, A.** Feb. 25.

Stirrups, safety.

The inner bow *B* is spring hinged to the outer bow *A*, and both bows are hooked to hold the ends of the detachable tread *C*, which is shown on the point of being released.



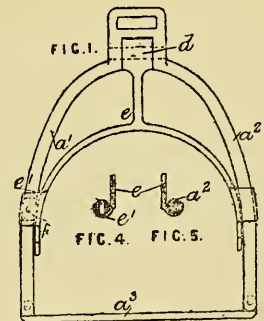
3018. **Howard, J., and Geddes, J. H.** Feb. 25.



Horse clippers and the like.—In apparatus for shearing sheep &c., the comb *A* is fixed to the casing *C* and the blades *B* are reciprocated across it by the lever *F* pivoted to the removable top part *D* of the casing and actuated by a disc crank, the spindle *A* of which passes through the handle *H'*. The pivot pin *E* has a rounded end so as to form a ball-and-socket joint, and is fixed by a lock nut *K* in the position which gives the required pressure on the blade. The lubricant is held in the socket by a cap. The rounded crank-pin *g* works in the fork *F'* on the end of the lever *F*, which is supported upon the casing *C* by an oscillating sector *J* slotted for the set-screw *j*.

3147. **Fiek, R.** Feb. 27.

Stirrups. — The tread *a³* is hinged to the legs *a¹*, *a²*, of which the former is in two parts connected by a pin *f* attached to the curved spring end *e¹* of the inner bow *e* pivoted at *d*. The pressure of the foot on the inner bow causes the leg *a¹* to divide and allow the stirrup to open out and free the foot.

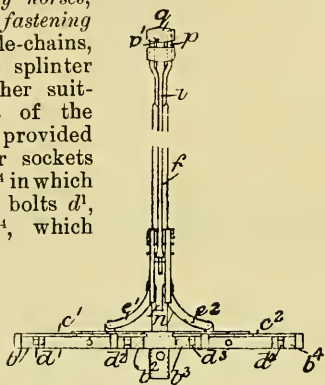


3607. Beeching, W. March 6.

Fastening, hooks for. The tongue *d* of a snap-hook for harness &c. is formed with a disc *D* which is pivoted to the hook at *b* and covers a spiral spring fixed to the hook and to the tongue.

**3649. Wittkugel, T.** March 7.

Runaway horses, releasing; fastening traces, pole-chains, &c. The splinter bar or other suitable part of the carriage is provided with four sockets *b*¹, *b*², *b*³, *b*⁴ in which fit sliding bolts *d*¹, *d*², *d*³, *d*⁴, which

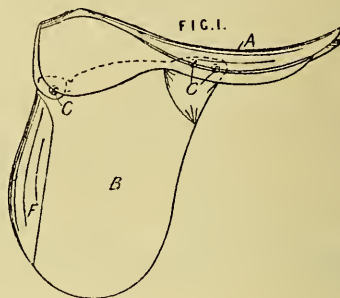


secure the traces and which are carried by two sliding plates *c*¹, *c*² attached to curved arms *e*¹, *e*² which can be operated by the driver by means of a lever *f* for forcing the plates *c*¹, *c*² outwards, thus withdrawing the bolts and releasing the traces. The collar chains or straps are secured by pins *p*, *p*¹ on the end of a sliding rod *i* fitting into sockets in a block *q* on the end of the pole. The rod *i* is attached to a sliding piece *n* in connection with the lever *f*, so that it is pulled back for releasing the collar chains at the same time that the traces are released.

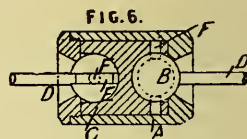
3709. Squier, F. W. March 8.

Saddles.—The combined saddle-tree and seat *A* is moulded in papier mâché, leather, &c., strengthened, if desired, by metal plates. The saddle thus formed may be left bare or covered with leather &c.; in the latter case padding may be introduced. Removable flaps *B* may be attached to this or any other saddle by bolts *C*. The knee pad *F* is formed by splitting the solid leather flap *B*, introducing padding between, and then uniting the edges.

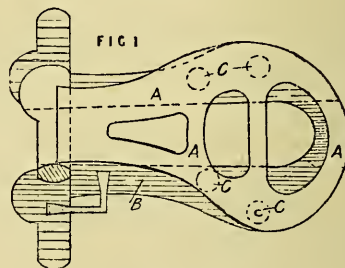
(For Drawing see next column.)

3709.**3956. Wolseley, F. Y., and Craven, P. P.** March 13.

Horse clippers and the like.—Relates to flexible shafting which may be used to drive sheep-shearing &c. machines. The shafting consists of a series



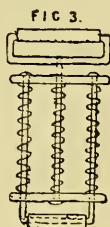
of rods connected by universal joints. These are composed of a cylindrical shell *A* having at one end a shoulder and at the other a screwed cap which, with the loose cone *C*, forms seats for the balls *B* in which the ends of the rods *D* are secured. The balls are locked to the cone by means of pins *F* and grooves *E*. The shell may be in two parts screwed together, or it may be replaced by caps screwed on the ends of the cone. Each joint may have a single ball only, retained in the shell by a screw plug in which one of the rods is secured.

4278. Clowes, T. March 19.

Saddles.—The seats of riding saddles consist of a large flat metal spring *A* sewn between two thicknesses of leather and attached to the head and cantle so that air may circulate between the seat and the animal's back. This spring plate may be supported on the side bars *B* by springs as at *C* or by blocks. Certain leather parts attached to the seat are perforated or cut away to afford ventilation, and the strap webbing beneath the seat is fastened round the side bars.

4279. Clowes, T. March 19.

Fastening saddle girths, spring attachments for. The girth is attached to the saddle by a spring frame. One form in which spiral springs are employed is shown in the Figure.

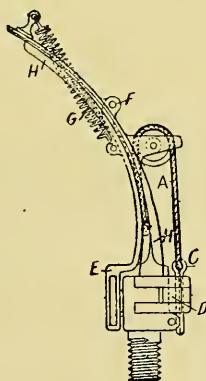
**4329. Macdonald, J.** March 20.

Straps and bands; dog collars.—

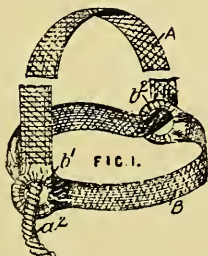
Bands for bridle brow-bands, for dog collars, and other purposes, are made of metal so stamped or cut as to give the appearance of chains. One form is shown in the Figure.

**4330. Cummings, W. G., and Peate, J.** March 20.

Saddles.—The heads of ladies' saddles are released if a fall occurs by a lever E, which is pivoted at F, and pulled up by a spring G. A cord A connects this lever with a pin C connecting the two hinged halves of the box D, in which the end of the head H is supported.

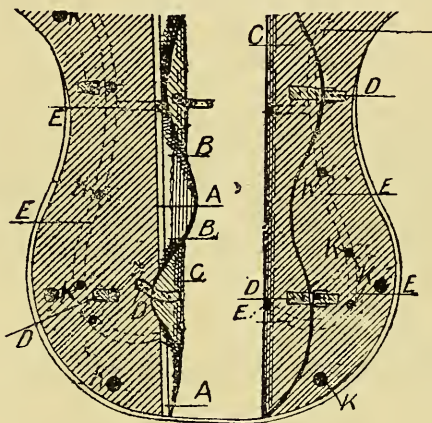
**4568. Freeman, W.** March 24.

Halters.—The nose-band B and head-band A of an adjustable halter are formed in one piece of plaited string &c., the head-band A passing through the eyes b^2 , b^1 at the extremities of the noseband, and terminating in a rope rein a^2 , as shown. In a modification, the noseband only is of plaiting, string, &c., and the rope forming the head-band may be separately attached to the ring b^1 .

**4583. Reimann, J.,** [Administrator of Reimann, B.]. March 24.

Dog collars and the like.—

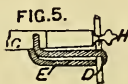
Relates to a fastening for attaching buckles and cross straps to straps. The Figure shows the metal blank for securing a cross-strap. The prongs a are passed through holes in the strap and the other arms are bent round the strap.

**4985. Orpwood, W. L.** March 31.

Saddles.—Saddle panels, as shown in underside view in the Figure, are made of one or more layers of felt A (covered with leather), next the saddle-tree, over which is a bed of flock B, covered with leather or prepared canvas C. This covering is continued to form a flap which doubles over the back of the panel, and is secured by buckles D or hooks &c. The padding can thus be easily varied to suit different animals. To ensure ventilation the felt may be corrugated or formed with grooves E, or provided with rubber tubes. Holes K are made through the felt and right through the panel. The sweat flaps are also perforated in the form of letters &c. for ventilation. The leather strips or facings at the edges of the panel terminate level with the bottom of it.

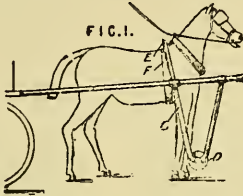
5412. Thompson, W. P., [Wynkoop, J. F.]. April 9.

Fastening traces. Each end of the single-tree C is provided with a knob H and a holding-loop E fixed by a bolt. The trace D is placed over the knob and through the loop as shown.



5498. Sims, C. April 11.

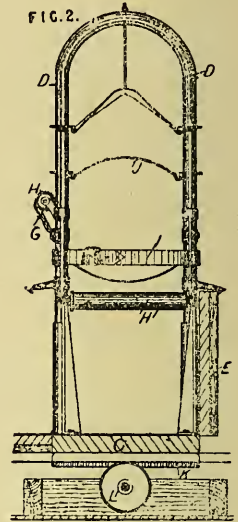
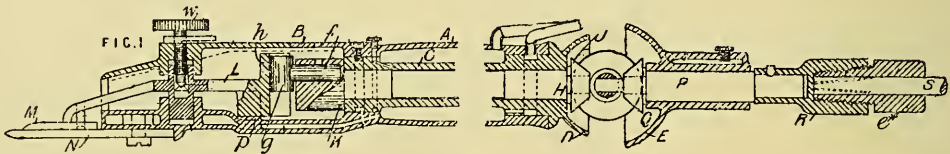
Whips, handles for. A number of layers or strips of leather are sewn or glued together and subjected to hydraulic pressure. A metal rod may be passed up the centre of the handle.

5528. Gladstone, E. April 11.

Preventing horses from falling.—A rod or rods C carrying a roller D and prolonged to form an arm E are fixed to the shaft or pole of an omnibus, tramcar, cab, van, &c., and support the horse by a girth F attached to the arm E. The Provisional Specification describes a support projecting horizontally from the vehicle over the animal's back.

5885. Sample, H. April 18.

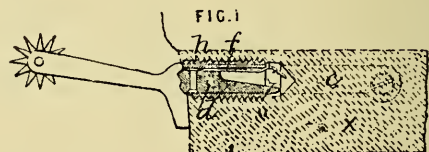
Training and breaking-in horses and other animals.—Horses and other animals are tamed or subdued before they are subjected to surgical operations &c. by fastening them into a stall which is made to rotate on a vertical axis. The stall consists of a floor C and hinged sides E, and the horse is suspended therein by a girth G tightened by a roller H fixed to the uprights D. A similar roller H' serves to tighten the halter strap, while straps J, I prevent kicking &c. The stall is rotated by gearing K, L'. A gangway to enable the horse to mount the stall is described.

**5921. Thomas, H. M.,** [Blanks, G. W., Lefebure, B., and Bird, F. J.]. April 18.

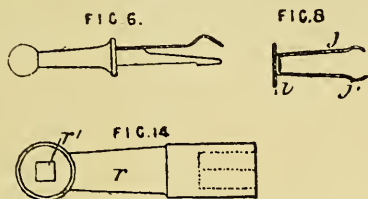
Horse clippers and the like.—Relates to sheep-shearing machines. The cutter M is oscillated upon the comb N by the bar L, which is pivoted to the casing B, and may be adjusted by the tension screw w. In the forked end h of the bar L works the cylindrical head g of the pin f, which fits loosely in the disc K upon the spindle H. This spindle is driven by the spindle P through bevel gearing J, Q, the central bevel-wheel being mounted loosely upon the pin which connects the hemispherical cups D and E to form a hinged joint. The flexible shaft S is secured to the spindle P by a nut R and a split taper bolt e, or the shaft S may be similarly secured to the spindle H. Water is made to circulate beneath the casing B, and between the casings A and C to keep the parts cool.

5935. Thirion, A. April 18.

Spurs and spur-carriers.—The spur, Fig. 1, has arms c embracing the boot heel X and has a tongue d and spring f, which fit into a spur-carrier h screwed into the heel. When the spur is not in use the hole may be closed by a plate i, Fig. 8, with spring tongues j, or by a mud guard, Fig. 6, which is fixed like the spur. The hole is bored in the heel by a boring-bit which passes centrally through a U-shaped frame carrying set-screws to adjust it to the heel. The hole is



afterwards tapped for the spur-carrier *h*, Fig. 1. A key, Fig. 14, is provided with a square recess for

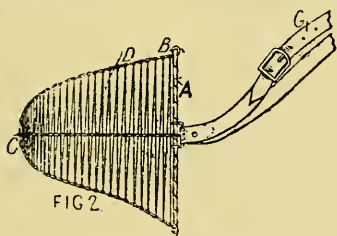


turning the boring-bit and set-screws, and a square pin *r*¹ at one end of the cross handle for inserting the spur-carrier.

6539. King, J. T., [*Sugden, E. J.*]. April 29.
Drawings to Specification.

Yokes, neck.—Neck-yoke irons are made of metal bars of various sections (preferably flanged), rolled, forged, or cast, and tapering from the middle to the ends, which latter are formed into hooks or eyes or are suitably shaped for attachment of the harness.

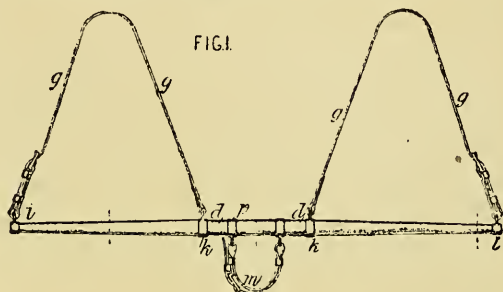
6767. Hewetson, W. May 2.



Muzzles for animals.—A muzzle for preventing calves from sucking consists of a leather-covered

ring *A* with two wires *B* and *C* on which the wire *D* is wound. The appliance is secured in position by a strap *G*.

6807. Middlemore, T., [*trading as Wm. Middlemore*]. May 2.



Yokes, neck.—A yoke or pole support for carriages consists of a tubular metallic bar *d* preferably tapering from an elliptic form at its centre to a circular form at its ends. Lugs *p*, *k*, *l* for attachment of the straps are shrunk or brazed on. The bar is secured to the pole by a strap *m* and to the horses' necks by straps *g*.

Curricie bars are constructed in a similar way from metallic tubular bars preferably of varying cross-section, hooks and eyes or equivalent fastenings being shrunk or brazed on.

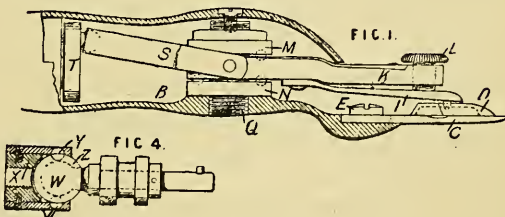
6843. Wood, E. E. May 3.

Whips.—Relates to a combined match box and walking-stick, whip, or other handle. The Figure shows a stick with chamber *a*, for matches, with a hinged cover *b*. A sliding or other lid may be used, or the chamber may open at the bent end of the handle, or be formed vertically in the stick &c.



6962. Ashberry, P., and Barnes, W. May 6.

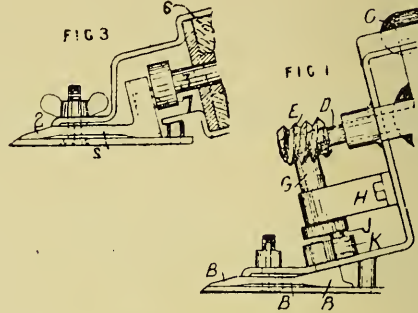
Horse clippers and the like.—In clippers for sheep and other animals the comb *C* is fixed by screws *E* passing through open-ended slots therein, and the cutter *D* is reciprocated upon it by a bar *I*, which is attached to the arm *K*, its pressure on the cutter being regulated by the screw *L*. The arm *K* is pivoted between collars *M*, *N* on the screw *Q* fixed to the casing *B*, ball bearings being disposed between the arm and the collars. The arm is actuated by the fork *S*, the rear end of which is socketed for the spherical crank-pin on the disc *T* driven by a flexible shaft. In a modification, the



bar I is pivoted at its middle to the arm K, and the screw L acts upon the rear end of it. The Provisional Specification describes a clipper in which the arm K is secured directly to the cutter D. Fig. 4 shows a universal joint for connecting the clipper to the flexible shaft. The socket X is screwed to the spindle of the clipper, and carries balls Y which turn in hemispherical sockets and run in a groove Z in the spherical head W of the part which is firmly secured to the driving-shaft.

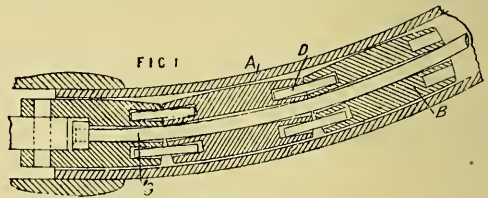
7241. Mossop, J. A. May 9.

Horse clippers and the like.— Clippers for the hair of animals &c. are driven by an electric motor through suitable gearing. In Fig. 1 the spindle D of the motor C carries a worm E engaging a worm-wheel on the shaft G, which has a crank J for the connecting-rod K actuating the movable cutter B. In Fig. 3, the upper cutter 2 is actuated by the crank 7 on the spindle 3 of the handle 6. Means are described for driving several clippers by flexible shafts in connection with an overhead shaft carrying several bevel-wheels, the latter shaft being driven by an electric motor.



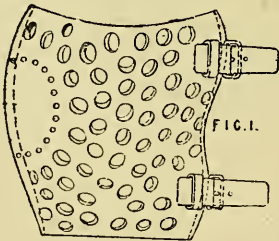
7632. Wolseley, F. Y., and Craven, P. P. May 16.

Horse clippers and the like.—Relates to flexible shafting for sheep-shearing, drilling, &c. machines. A series of barrel-shaped blocks B, B are connected by pins D, D loosely fitting in holes in their ends, which are preferably convex. The blocks may be enclosed in a shield A, and may be connected by a wire or wire rope G.

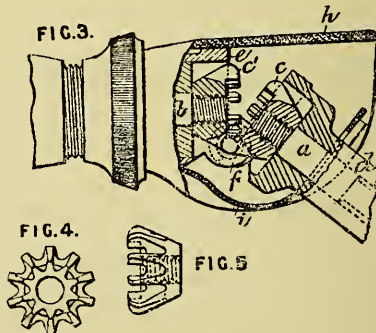


7986. Boulton, A. J., [Müller, E. W., and Friedl, J.]. May 22.

Horse-boots; interfering rings and the like.—Bands or straps for preventing injury to the foot or leg of a horse are made of rubber shaped in moulds cast directly from the leg &c. The pads are perforated and vulcanized, and are lined with leather and have fixing-straps attached to them.



machines &c. The shafts a, b are connected by toothed wheels c, c' and rotate in the sleeves d, e,



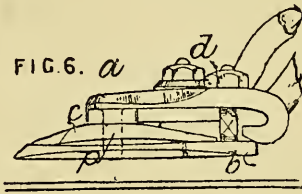
which are jointed together at f on a line tangential to the pitch circle of the wheels. h and i are leather shields.

8017. Wolseley, F. Y. May 22.

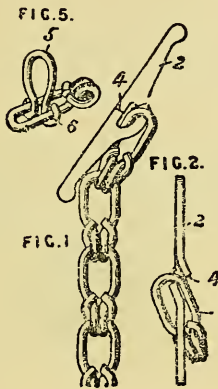
Horse clippers and the like.—Relates to a universal joint for the spindles of sheep-shearing

8078. Martin, A. May 23.

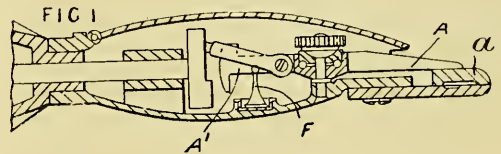
Horse clippers and the like.—Relates to spring plates and washers for hair clippers &c. The upper plate *c* is pressed upon the lower plate *b* by a spring arm *a* or by a washer. The spring arm *a* is pressed down by the nut *d*, and carries the guide-pin *p*. There may be a pair of arms *a*, through which passes a pin fixed to the lower plate. A spring washer of U form may be used between the upper plate *c* and a nut on the pin *p*. A washer of felt &c. soaked in oil, is used with these spring plates or washers for lubricating purposes.

**8188. Allison, H. J.,** [Bridgeport Chain Co.]. May 27.

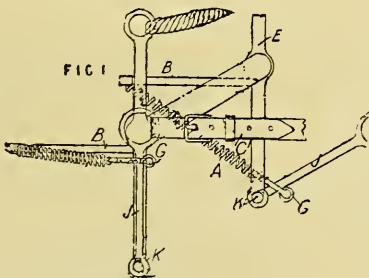
Halters; dog leashes.—Relates to attachments for halter chains, kennel chains, &c. The cross-bar 2 is stamped from sheet metal in the form shown, and is split at 4. The split ends are separated to allow the insertion of the chain link as in Fig. 2, after which they are closed up. The loop 5 for the bar is made with eyes 6, each embracing one side of the link.



chains &c., and the arms B are hinged to the cheeks, suitable springs being arranged to urge them normally to take a horizontal position.

9173. Hardingham, G. G. M., [Silver's Patent Sheepshearing Machine and Flexible Shaft Co.]. June 18. Amended.

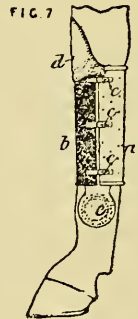
Horse clippers and the like.—Relates to improvements on the wool or hair clippers and sheepshearing apparatus described in Specification No. 17,270, A.D. 1889. Instead of supporting, by means of a roller, the end A' of the oscillating lever A, which works the cutter blade *a*, the arm A' is supported by a pin F with a small spherical head fitting into a socket, and a curved base bearing against the flat bottom of a steel dish.

8650. Butlin, C. H. June 4.

Bits.—To enable the severity of the bit to be increased by strongly pulling the single pair of driving-reins C', they are secured to levers J pivoted at K on the cheeks E, and controlled by springs A which carry rollers G running on the levers, and are attached to arms B fixed to the cheeks. On pulling the reins to overcome the springs A, the levers J turn on their pivots, and so increase the leverage on the bit. In a modification, the springs A are replaced by bars or

9761. Poole, J. E. June 24.

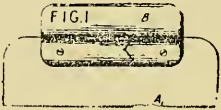
Horse - boots.—Relates to leg supports for keeping down varicose veins, for use by athletes and horses. One form consists of a piece *a* of rigid or semi-rigid material, such as leather, papier mâché, thin wood, or vulcanite, which is shaped to the leg, and a second piece *b* of elastic material. The two parts are connected by fastenings *c* of any suitable form, and may be ventilated in any desired manner. The rigid part *a* may consist of a local



pressure pad, or of a series of strips. The elastic part *b* may be replaced by plain fabric, or dispensed with altogether. In the latter case, the rigid part is provided with yielding fastenings. A knee-cap *d* and brush pad *e* may be attached.

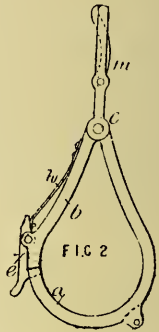
10,132. Barnes, J. E. L., [Thomas, H. G.]. July 1.

Combs.—The comb or scraper is for removing the loose hair from the animal's coat. It consists of a finely-serrated blade *A* fixed to a handle *B* as shown.



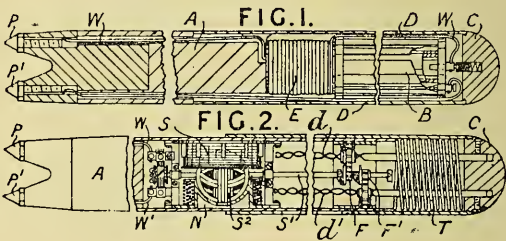
10,141. Macaulay - Cruikshank, G., [Hurley, J. S.]. July 1.

Tugs, shaft; fastening shaft-tugs. The tug is in the form of a snap-hook with the tongue *b* and body part *a* hinged at *c* to the buckle *m*. The tongue *b* carries the pivoted thumb catch *e*, the end of which is forced inwards to engage a slot in the body *a* by means of a spring *h*. The slot and the end of the catch are so inclined that pressure on the part *b* caused by the shaft will not open the tug accidentally.



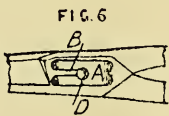
10,445. Bayly, J. P., [Burton, J., Roach, E., MacNair, R., MacNair, W. P., and Lanning, C.]. July 5.

Goads.—Relates to an electric prod pole for animals. The end of the pole consists of two metal points embedded in an insulating-material and connected respectively to the two poles of an electric apparatus. Two forms are described, having respectively a galvano-electric and a dynamo-electric apparatus. Fig. 1 shows the pole *A* with points *P*, *P'* connected electrically to the poles of a battery *B* held by a cap *C* in a chamber formed by a tube *D* secured on the end of the pole *A*; a coil *E* is formed in the wire *W* attached to the positive pole. Fig. 2 shows the pole *A* with wires *W*, *W'* leading from the commutator of the dynamo *N*, *S*. The armature *S*² is mounted on a rotary shaft *S*¹ operated by two ratchet-wheels *F*, *F'* connected by spur gearing actuated by screws *d*, *d'* attached to a movable cap on a sliding end piece. The said piece is depressed by hand and raised by a spring *T*. The two sets of ratchet gearing are arranged to give a continuous rotation to the armature.

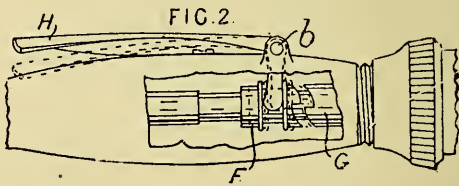


10,605. Court, E. J. July 8.

Horse clippers and the like.—The two pivoted parts of shears or clippers are pressed together to ensure better working by an arched spring *A* which is fitted with a slot *B* engaging under the head *D* of the pivot pin.



like device for stopping the cutting-mechanism while the shaft continues to rotate. The Figure shows one form of clutch, in which a toothed



10,612. Bown, W., and Capewell, G. July 9.

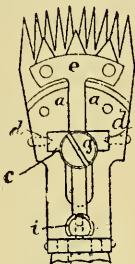
Horse clippers and the like.—Clippers for hair, wool, &c., which are actuated by a continuously-rotating flexible shaft, are fitted with a clutch or

sleeve *F* is slid towards or from the toothed shoulder *G* of the driving-shaft by the bent lever *H* pivoted at *b*. The sliding sleeve may be operated by a spring and freed by the handle *H*.

10,828. Burgon, C. July 12.

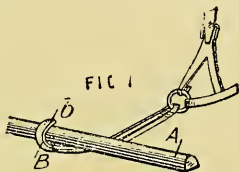
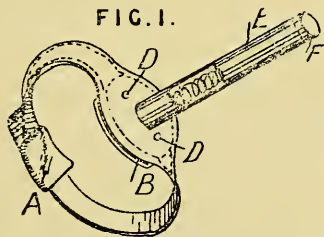
Horse clippers and the like.

—Relates to apparatus for clipping or shearing sheep &c. The cutter carrier *e* is pivoted at *g* and a T-shaped piece *c* which is itself pivoted at *d* to the casing and is adjusted by a screw cam or lever &c. The cutter carrier is reciprocated by a crank which carries a ball or sliding block *i* embraced by the forked end of the carrier. The flexible shaft described in Specification No. 1337, A.D. 1890, is used to drive this apparatus.

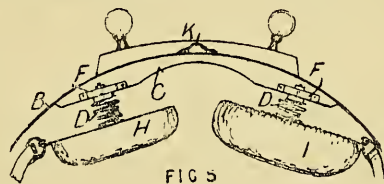
**10,834. Bayly, J. P., [Ormsby, J.]** July 12.

Fastening breeching.

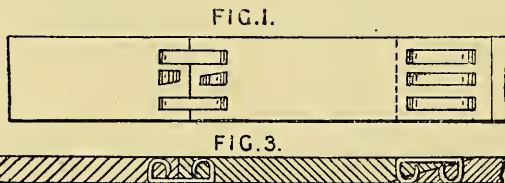
A breeching fastening or "hold-back" for vehicle shafts consists of a piece of metal *B* bent partly round the shaft *A* and having its lower end flattened to form flaps which are screwed to the bottom of the shaft. The fastening thus forms a kind of hook, the breeching strap being passed over the point *b*.

**11,524. Bayly, J. P., [Hague, L., and Bolles, W.]** July 23.

Training horses; horse-boots; horse-training saddlery.—The object is to train horses to step properly and to avoid travelling too closely behind. An elastic arm *E* is secured at right-angles to the horse-boot *A*, a pad *B* being provided on the side next the arm. The arm may be of solid rubber &c., or consist of a spiral spring enclosed in a jacket of rubber or leather &c. A knob *F* is secured at the end of the arm.

11,568. Close, F. A. July 24.

Saddles.—A saddle for draught and other horses consists of a curved metal plate *B* through which the wooden part *C* (of rectangular form in plan) projects as shown. The panels *H, I* are of metal, or of two metals such as steel and zinc with a layer of felt between if desired. The metal may be perforated for ventilation, and may be covered with leather &c., as at *I*. These panels are adjustably attached by helical springs *D* to bars *F* on the part *C*. A metal nose-piece *K* is attached to this improved saddle, or to ordinary saddles. The crupper is attached to a roller on the end of a long staple. No stitching is used in this saddle, the parts being fastened by bolts and nuts &c.

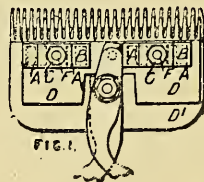
11,744. Cabana, O. July 26.

Fastening straps &c., staples for. Harness and other straps are fastened or mended by staples instead of stitching. The staples, preferably arranged as shown in Fig. 1, are passed through the straps and clinched as shown in Fig. 3.

11,872. Blyth, P. J. July 29.

Horse clippers and the like.—The serrated

cutters *D, D'* of horse and like clippers are pressed together by bolts *F* fixed to the lower plate and passing through slots in the upper plate and through holes in the boxes *B*, and by nuts *C* bearing upon these boxes. The boxes *B* are recessed beneath to receive antifriction rollers *A* which are free to run to and fro in the recesses.

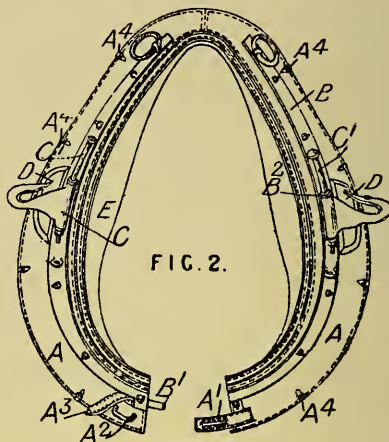


11,957. McKenny, J. July 31. *Drawings to Specification.*

Saddles.—Rings are attached to the front of a riding saddle to serve as a guide to the reins

12,236. Lehmann, C. H. Aug. 5.

Collars, neck; fastening collars and hames, couplings for. The collar for draught horses consists of an outer part A of wood, or of several thicknesses of leather strengthened by a metal lining to which is secured by buckles &c. A⁴ an inner pad E, thus giving access to the pad for adjusting the stuffing. The collar is divided at one end and fastened by the staple A² and straps A³, A¹. The hames are fixed by bolts or straps &c. to the outer part A, and are made in two parts and joined by a bolt B¹ fitting into a socket. The trace hook C is adjustably fixed by the bolt C¹ between any two adjacent eyes B². Blocks D against which the trace hooks rest serve to keep the traces from the animal's side.

**12,904. Elliott, F.** Aug. 16.

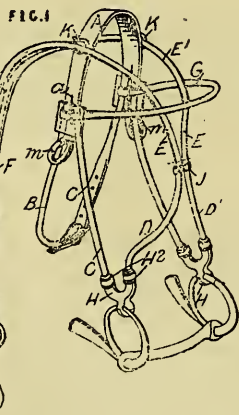
Horse - boots.—A pad made of rubber &c. covers the back of the hoof as shown. Injury to the legs and flanks while the horse is lying down is thus prevented.



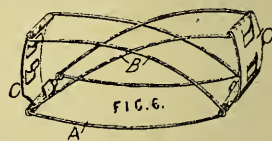
rein these straps are removed from their fastenings J, K, the clasps H are reversed, and the straps are then passed through the snap-hooks m arranged at the ends of a brow band G. The fastening H consists of a double hook with two trough-shaped arms for enclosing the strap C. The arms are clasped together by nuts H².

13,096. Bayly, J. P., [Rafferty, J.]. Aug. 20.

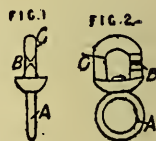
Bridles.—An adjustable bridle is combined with a check rein, which may be variously arranged. The crown strap A is divided at a on each side into the strap B forming the throat-latch and the strap C which, after passing through hook clamps H to secure it to the bit, is continued to form the check rein E, the rein on each side afterwards uniting to form the single rein F provided with a loop f for the usual hook. When arranged as an over-draw check rein the straps D, D¹, E, E¹ are connected together at J, and pass through fastenings K on the crown strap. When arranged as a side check

**13,778. Sayle, R. G.** Sept. 2.

Tail ties.—A clasp for holding animals' tails consists of two rectangular wire frames B, B hinged to a third frame A and provided with hooked plates C, C for hooking to the same.

**14,633. Inglefield, E. F.** Sept. 16.

Fastening straps, hooks and eyes for. An eye A of any suitable form is fixed or swivelled to a hook C having pointed jaws B to enable two such hooks to be readily coupled when the jaws are held at right angles to each other. The invention is stated to be applicable for joining harness straps.

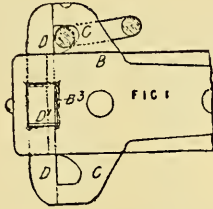


15,011. Clark, A. M., [*Middleton, J. W.*]. Sept. 23.

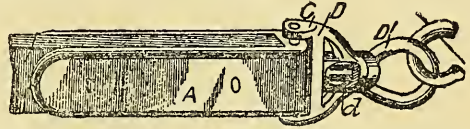
Whips.—The thong *b* is attached to the handle *C* by forming the latter hollow throughout or at the end only, as shown, and pulling the thong through the entire handle or through an opening in the side, as shown, until its enlarged end becomes wedged into the end of the handle.

**15,290. Weekes, J., Robson, W., and Robson, T.** Sept. 27.

Fastening pole-chains &c., draw-bolts and hooks for. Hooks are locked by a sliding spring bolt which may be operated by hand or by a key &c. Fig. 1 shows an underside view of a carriage pole cap *B*, fitted with a bolt *D*, for locking the hooks *C*, *C*. The bolt is pressed downwards by a coiled spring, so that the projection *D*¹ snaps into the hole *B*³ in the cap when in the position shown. To unlock the bolt it must be raised until the projection clears the hole *B*³ and then slid laterally. The hook and bolt may be so bevelled that the pole-chain is automatically released if the horse falls. For locking a single hook the bolt may be made to lift like a latch.



recess *a*² receives the tongue if pressed back to its limit.

15,558. Marshall, J. B. April 12, [date claimed under Sec. 103 of Patents &c. Act, A.D. 1883].

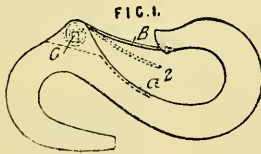
Fastening traces, clips and eyes for. Relates to swivel fastenings for traces. The link *D*¹ is swivelled by the pin *d* to the frame *D* which carries lugs *C*, between which is pivoted the clip *A* embracing the trace.

15,700. Govan, A. A. Oct. 4.

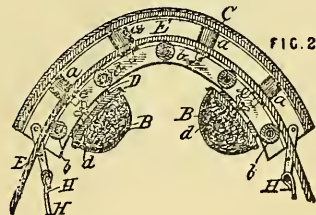
Bits.—The rein loop *B* is free to slide on the curved cheek *A*, but is held normally against the spring case *G* by the spring *C*.

**15,458. Thompson, W. P.,** [*Lundborg, C. G.*]. Sept. 30.

Fastening, hooks for. Snap-hooks for harness &c. are made with a tongue *B* of strip steel &c. coiled round the fixed pin *C*. *A*

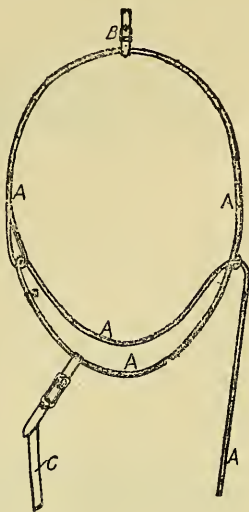
**15,879. Blackford, E. O., and Stoughton, H. R.** Oct. 7.

Saddles, cart. The saddle, specially adapted for animals with sore backs, consists of two parallel saddle-trees united by a plate *C*, plates *D*, and by the spindles of a series of rollers *b*; other rollers *a* are arranged in pairs in recesses in the trees. The backband *E* passes over the rollers *b* and between the pairs of rollers *a*. Pads *B* are adjustably attached by bolts and thumb-nuts *e* to the slotted plates *D*. The girth *H* may be attached as shown, and the backband may consist of alternate lengths of strap and chain. Coverings to protect the animal from rain &c. may be attached to the front and rear of the saddle, being rolled up when not in use.

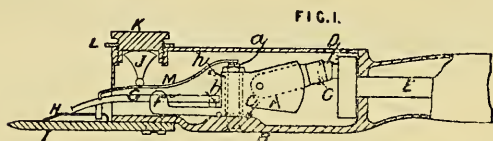


15,935. Williams, D.
Oct. 8.

Stopping and controlling runaway horses.—Runaway horses are controlled by a noose A, which passes round the animal's neck, and is connected to the crown strap of the bridle by the strap B. The noose is released by a strap C.



16,029. Bown, W., and Capewell, G.
Oct. 9.

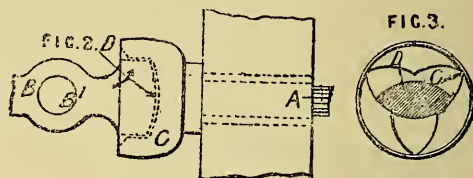


Horse clippers and the like.—Fig. 1 shows one form of hair &c. clipper in which the lever A is slotted for the hinged piece C fitting the stud D on the crank of the motive shaft E. The other end of the lever A is formed with a clip F, which connects it to the pressure bar G. This bar bears at one end upon the cutting-plate H, and moves it to and fro across the comb I, and bears at the other end upon a pivot b on the lever A. Antifriction balls c may be arranged beneath the lever A. The pressure on the cutter is effected by a nut K, with lock nut L, bearing upon the oscillator J, described in Specification No. 1107, A.D. 1885. The head of the oscillator bears on the spring M, which is supported upon the pivot a and upon the bar G. The pivot a may be enclosed in a loose sleeve h to take the wear. In a modification, the pin D engages directly in the slot in the lever A, and the spring M is dispensed with, the oscillator J bearing directly on the bar G. In another modification, the oscillator J is replaced by a ball, and the inner end of the bar G bears upon the end of a L-shaped piece pivoted within the pivot a. Many of the joints and connections may be reversed or be replaced by their mechanical equivalents.

16,194. Blackie, P., and Nisbet, J.
Oct. 11.

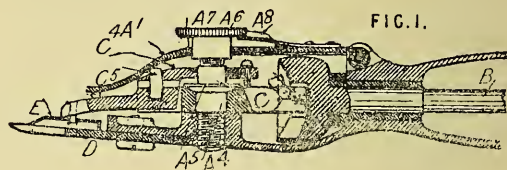
Horse clippers and the like.—Relates to cams for converting rotary into reciprocating motion and

vice versa, applicable in sheep-shearing machines. The hollow star-shaped cam C is mounted on a rotating shaft A and engages the piece D formed



on the end of the lever B, which is pivoted at B¹. The number of rays in the cam depends upon the number of reciprocations required for each rotation of the shaft. The method of drawing the curves is described.

16,195. Blackie, P., and Nisbet, J.
Oct. 11.

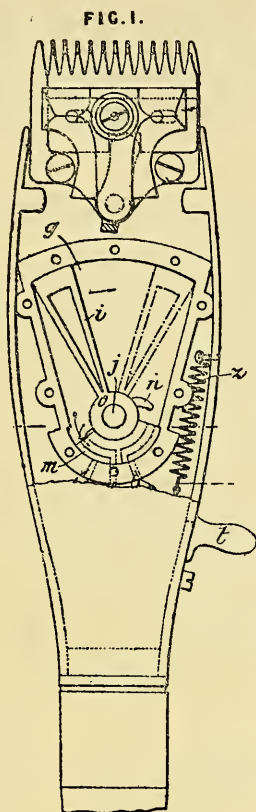


Horse clippers and the like.—Relates to sheep-shearing machines. Fig. 1 shows a longitudinal section of one form of the machine. The cutter E is reciprocated over the comb D by the lever C⁴ pivoted at A⁵ and actuated by the lever C, its pressure on the comb being obtained by the hinged spring plate A¹ bearing on the roller C⁵. The lever C is pivoted at A⁴, and actuated from the shaft B through special mechanism which is described in Specification No. 16,194, A.D. 1890. The tension of the spring A¹ is regulated by the nut A⁶ which bears on the pin A⁷ and is prevented from shaking loose by the spring pawl A⁸. The upper face of the comb plate is slightly concave, and the cutter is curved to fit it. In another form, the lever C is pivoted in rear of the lever C⁴ and its forked end engages the rear instead of the front arm of the lever. The pressure on the lever C⁴ is given directly by a nut which bears on a flexible packing.

17,016. Cole, W. Oct. 24.

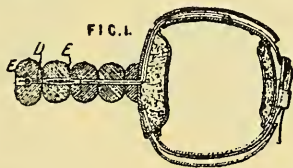
Horse clippers and the like.—Relates to a motor of the oscillating-vane type, and intended mainly for obtaining an oscillating or reciprocating motion in sheep shears, horse clippers, and the like. The invention is illustrated as applied to sheep shears. The piston or vane i works in a sector-shaped chamber g, and is mounted on a rocking shaft j

from which by a suitable lever connection motion is communicated to the working cutter. At the rear end of the working chamber is a sector-shaped distributing-valve *m* to which motion is given by tappets *n* projecting from the piston boss *o*. The fluid-supply valve is opened by a lever *t*, which is adapted to be acted on by the forefinger of the operator in opposition to a spring *z*, whereby the valve is closed on the release of the lever. This device is arranged so that when the valve is open very little strain is thrown on the finger. There are also arranged, in combination with the lever *t*, means for preventing the piston from stopping at a dead point.



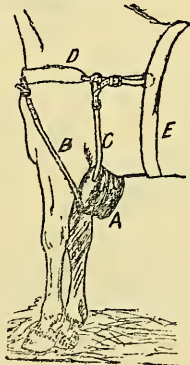
17,174. Lee, L. S. May 1, [date claimed under Sec. 103 of Patents &c. Act, A.D. 1883].

Interfering rings and the like.—A projection consisting of a strap *D*, on which are threaded a number of rubber &c. balls *E*, is attached to the leg of the horse by a padded buckle strap.



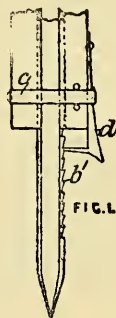
17,359. Offord, T. Oct. 30.

Elbow pads for horses. To prevent injury to the elbow by the fore feet of the horse when it is lying down, a pad *A* is suspended by straps *B*, *C* from the breast strap *D* held in place by the girth *E*.



17,527. McKellen, S. D. Nov. 1.

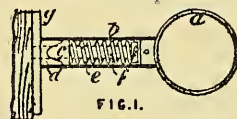
Whips.—The telescopic parts of whip handles are fastened by a catch *d* on the outer part which engages with teeth *b'* on the inner part. Both parts are further secured by a clasp or guide-ring *c*. In the case of tubes, the outer tube, if not elastic, is provided with a slot for the catch to pass through.



17,535. Mallet, T. C. Nov. 1.

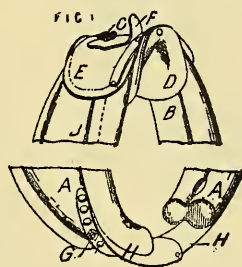
Whip sockets.—The object is to enable a whip socket to turn when the whip supported by it is struck in any way, and thus to prevent the whip from being injured.

The socket is held in the ring *a* on the end of the tube *b* to which the cam *c* is fixed. When the socket is turned, the cam runs up the sides of the second cam *d*, and compresses the spring *e* on the bolt *f*, which is fixed to the base-plate *g*. The socket is afterwards automatically returned to its upright position. Other spring arrangements may be used.

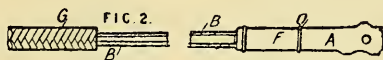


17,632. Boulton, A. J., [Irvine, W., and Parkinson, J. H.]. Nov. 3.

Collars, neck.—The upper portion *B* of the collar *A* is made flexible and one part overlaps the other, to which it is adjustably bolted by a bolt fixed to the pad *D* and a nut *C* which holds the horn *F* and covering-plate *E*. The bottom of the collar is hinged, one side of the hinge *H* being adjustably bolted at *G* as shown.



17,749. Ashford, C. Nov. 5.

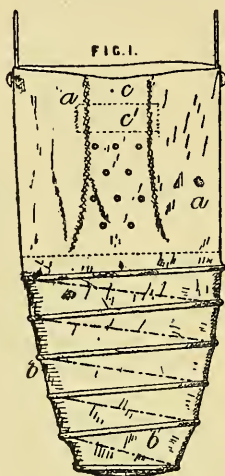


Whips.—The thong *G* is connected to the usual stock *A* by steel or other wires *B*, *B* of different lengths, the thong being bound or plaited thereto. The wires are bound in grooves in the stock, or are

secured by a collar F, into a recess O or through holes in which the ends project. The wires may be maintained at their proper distance by connecting plates or bows. The wires may be plaited or separately bound with leather &c.; leather may also be bound round the bundle of wires. In driving-crops the wire itself may form the loop for the thong, or the usual loop may be plaited to the wires. A piece of whalebone may be bound between the wires to form the centre of the thong.

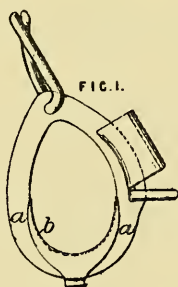
17,877. Gardner, H., [Bretonneau, A. L.]. Nov. 6.

Nosebags.—The lower part of the bag *a* is fitted with a coiled spring *b*, which tends to contract to make the coils come close together. By this means the food is kept up to the level of the animal's mouth. Ventilation is ensured by a perforated pleat *c* maintained by a cross-strap *c*¹.



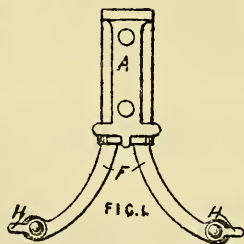
17,907. Pendlebury, E. B., and Rothwell, P. Nov. 7.

Tugs, shaft.—A replaceable metal lining *b* is provided to lessen the wear.



18,039. Kipling, E. Nov. 10.

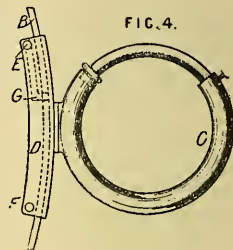
Fastening pole-chains, shackles for. Fig. 1 shows the pole-head in plan. A metal fitting *A* secured to the end of the pole is formed with two sockets for receiving the shanks of the two arms *F* which are provided at their ends with shackles *H* for



receiving the chains or straps by which the horses are attached. The arms are not rigidly attached to the sockets but can rotate therein through a certain angle, so that if a horse falls they can swivel downwards. The length of the shaft is also reduced so that its end is clear of the horse's head.

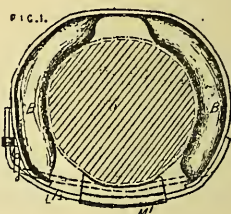
19,529. Edwards, E., [Mehnert, R., and Lutzmann, F.]. Nov. 17.

Tugs, shaft.—The tug consists of a ring *C* on a bracket *D*. The ring is capable of being opened at the top; in the form shown the main part of the ring is hollow to receive the other part, which slides within it against the action of a spiral spring. In a modification, the upper part of the ring is hinged and urged open by a spring, a suitable spring catch holding the ring closed. The back-band *B* passes through the bracket *D*, and is held in place by a roller *F*, and by a hook *G* pivoted at *E* and catching in one of the holes of the strap.

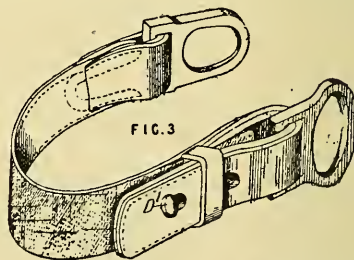


18,586. Heys, W. E., [Martinot, F.]. Nov. 18.

Knee-caps.—Knee-caps for animals are made with one or more hollow india-rubber pads *B*, *B* secured by a strap or straps prevented from contact with the animal's leg by a double tube *M*¹.



18,911. Arnold, J. Nov. 21.



Hobbles; slings, lifting and like; fastening.—Hobbles for casting animals, bandages, slings, and other veterinary articles are made of a material consisting of woven horse-hair fabric or the like, stitched &c. to a backing of leather. Fig. 3 shows

a hobble of this material arranged as shown and provided with a fastening consisting of a stud *D*¹ pivoted to a plate secured to the strap at the back and provided with an oblong &c. head to enter the keyhole or other slots in the end of the strap.

18,987. Chalmers, W. B. Nov. 22. *Drawings to Specification.*

Foothold mats for roads.—Foothold is given to animals to enable them to rise if fallen, or to start on slippery roads, by means of a net of rope or leather &c. provided with rings at the corners to enable it to be drawn under the animal. Additional tufts or knotted pieces may be attached to the meshes of the net.

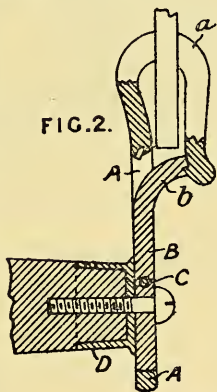
19,042. Roberts, W. Nov. 24.

Saddles.—Ladies' saddles are fitted with a roller on the top of one or both crutches to prevent the habit from catching.

19,127. Blackburn, C. W., Patton, J. J., and Coffman, B. S. Nov. 25.

Fastening traces, hooks for. Relates to a hook for whipple-trees and the like. The hook *a* is formed on the end of a frame *A*, which surrounds a plate *B* formed with a tongue *b* which closes the hook as shown. The frame *A* is pivoted to the plate *B* by pins *C*, and the ferrule *D* on the end of the whipple-tree. In the position shown, the frame *A* cannot turn on its pivots *C*, it being held by a catch (not shown) on the ferrule *D*. By turning the plate *B* on its pivot, through a certain angle, the catch is disengaged and the frame *A* can be turned on its pivots for opening the hook.

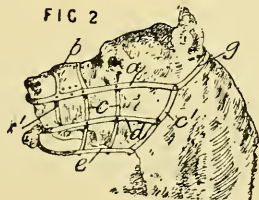
FIG. 2.



19,703. Steinbach, A. R. Dec. 3.

Muzzles for animals.—The muzzle consists of two longitudinal loops *a*, *d*, connected by the straps *f*¹ and the loops *c*, *c*¹, which latter are also joined to the strap *e* beneath the jaw.

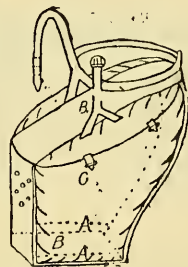
FIG 2



Straps *g* for buckling are jointed to the straps *a* and *c*. A broad strap *b* rests on the nose.

19,799. Bielefeld, J. M. Dec. 4.

Nose bags.—The nosebag is made wholly or in part of canvas, cork, leather, or metal, &c., and has preferably the same shape as the animal's head, as shown. There is a central compartment *B* and two side compartments *C* which communicate with it by slits *A*, *A*, through which the food passes as it is consumed. The bottom of the bag may be removable.



19,837. Harvey, M., Harvey, A., and Harvey, F., [trading as Matthew Harvey & Co.], and **Nevill, W.** Dec. 5.

Lasso; collars, neck; saddles.—Lasso and other rings, buckles, and harness terrets are made of iron or steel &c. covered with sheet brass or other ductile metal or alloy.

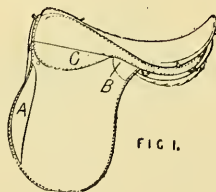
For rings a sheet-metal blank is stamped to the form shown in Fig. 3, and then to the form shown in Fig. 4, the interior *c* and the flange *e* being afterwards cut out. The ring or buckle frame is then placed in the cavity, and the sheet metal is closed over.

FIG 3

FIG. 4

20,066. Miles, J. T. Dec. 9.

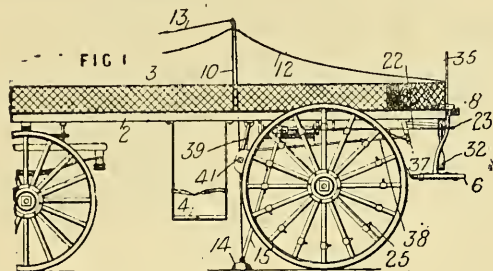
Saddles.—The knee and thigh pads *A* and *B* respectively are made by suitably splitting the single piece of leather forming the flap, introducing the stuffing, and then sewing &c. the edges of the leather together. The same method may be applied to the raised part *C* of the skirts.



20,194. Thompson, W. P., [See, C.]. Dec. 10.

Bridles; rein-holders.—Relates to wagons for parcels and small articles. The ordinary reins 12, as well as the hitching-reins 13, are supported on a rein-holder 10 near the centre of the wagon body, and the hitching-rein passes downwards through

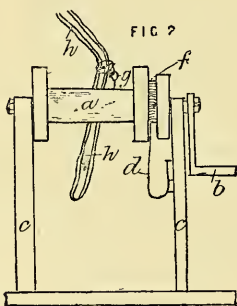
the body and is attached to a weight 14 which, when lowered as shown, holds the rein 13 in tension. In starting the vehicle the weight 14 is



automatically raised by means of hooks 25 on the wheel spokes engaging a ring on the end of a strap 15 attached to the weight. The weight, when raised, is held up by a clutch operated by the driver by means of a rod 22 with handle 23.

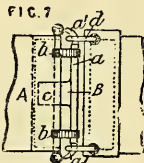
20,500. Davies, J., and Atkinson, J.
Dec. 16.

Stopping runaway horses.—The reins *h* are attached by a hook *g* to a roller *a* held by supports *c*. *c* to the driver's seat, and provided with a handle *b*, by which the driver can wind up the reins and restrain the animal. A pawl *d* and ratchet-wheel *f* prevent the roller from running back.



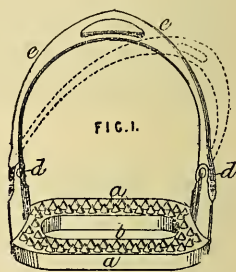
20,556. Simpson, H. J. Dec. 17.

Fastening; dog leashes.—Relates to fastenings consisting essentially of a bar with a hook or bent finger at one or both ends and capable of being turned on its axis to facilitate engagement or disengagement of the hooks &c. Fig. 7 shows a form of fastening applicable to straps. One part *A* carries in links *b* a bar *a* provided with a handle *c* and with hooks *a'* at the ends to engage with eyes *d* fixed to the other part *B*. On rotating the bar *a* by the handle *c*, the eyes *d* become free. The apparatus, with suitable modifications, is stated to be applicable for securing traces and whips, and for other harness attachments for vehicles; it is applicable also to dog leashes.



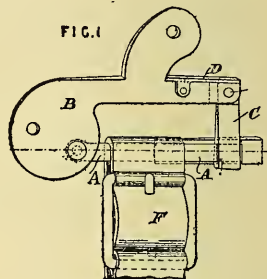
20,579. Dolman, F. H. Dec. 17.

Stirrups.—The tread *a*, provided with openings *b* or otherwise, is entirely covered with india-rubber moulded upon it, the labour of keeping the tread bright being thus dispensed with. The bow *e* is hinged at *d*, *d*.

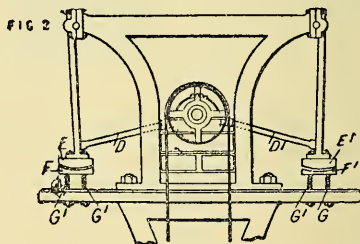


20,691. Kenrick, R. J., and Scilley, W.
Dec. 18.

Stirrup straps, suspending, safety saddle-bars for. The stirrup leather *F* is suspended from a bar *A*, which is pivoted to the bracket *B* and held up at the end by a loop *C*, also pivoted to the bracket *B*, which is fixed to the saddle-tree. A spring *D* bears on the flat end of the loop *C*. If the rider falls, the stirrup leather presses back the loop *C* and frees the bar *A*, thus enabling the stirrup leather to slide off.



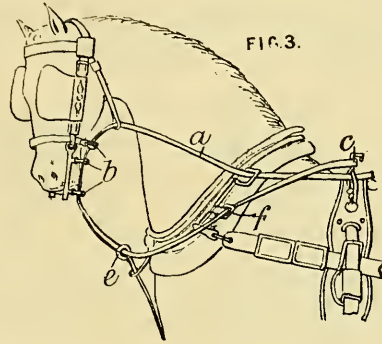
20,724. Averill, C. H. Dec. 19.



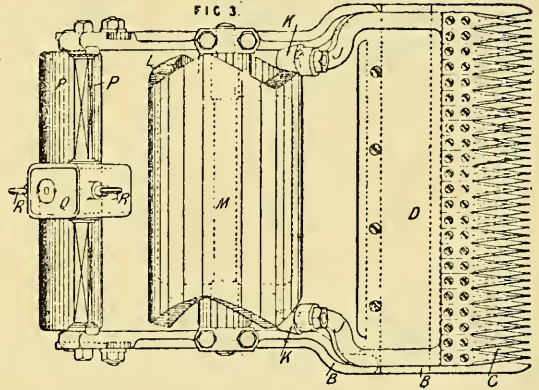
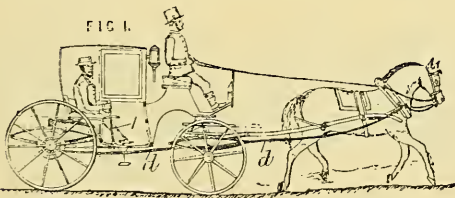
Bridles; dog leaders and collars.—Relates to machinery for manufacturing circular leather driving-reins, dog slips and collars, &c. The leather strips are placed between longitudinally-corrugated curved plates *E*, *F*, *E'*, *F'*, and a rubbing motion is produced by causing either the upper plate alone or both the upper and lower plates to oscillate by means of eccentrically-actuated rods *D*, *D'*. Springs *G*, *G'* may be employed with either the upper or lower surfaces. Fig. 2 shows one driving-shaft with eccentrics or cranks, but when both surfaces move a second shaft is employed, the two shafts being geared together.

20,733. Tate, J. Dec. 19.

Bridles; martingales.—The rein *a* for riding or driving is carried through rollers *b* on the bit and noseband and is fixed in various ways. Fig. 3 shows the rein carried through a loop *e* on the martingale and a loop *f* on the saddle and held by the bearing-rein hook *c*. The rein may pass directly from the bit to the hook *c* or to a ring on the saddle without passing through the martingale ring. In another arrangement, the rein itself forms the martingale and is secured to the saddle girth.

**20,837. Chandler, A.** Dec. 20.

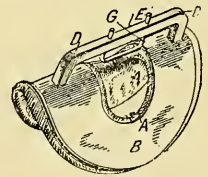
Horse clippers and the like.—Relates to machines for cutting grass on lawns, and for shearing or clipping animals. Fig. 3 shows the machine adapted as a lawn-mower. The frame *B* carries a number of knives *C*, and also a dovetailed projection, which serves as a guide for the reciprocating cutter plate *D*. The plate *D* is fitted with arms *F* carrying rollers *K*, which run on the cam surfaces *L* of a twin cam roller *M*, which may be grooved or roughened to enable it to better grip the ground. The machine may be steadied by an adjustable roller *P* at the rear or by rollers in front. A grass-collecting tray open at one side is fitted on the reciprocating plate *D*, and delivers all the cut grass at one side of the machine. The handle socket *Q* is fitted with adjusting-screws *R*. The machine is made in a smaller size for shearing and clipping animals.

**20,870. Bartz, E.** Dec. 22.

Stopping runaway horses.—A rope *d* attached to each side of the bit, collar, or breast strap is attached at its rear end to a drum formed on one part of a friction cone clutch, the other part of which is fixed to the wheel so as to rotate therewith. This clutch can be thrown into gear by the occupant by means of a lever *I*, or by the driver on his box, and will wind up the rope *d*, thus pulling in the horse.

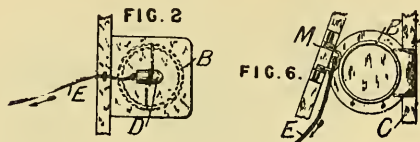
21,081. Buckles, D. D. Dec. 27.

Collars, neck.—Horse-collar pads, to prevent the neck from becoming sore where the tongue of a wagon or plough is used, are made in a single piece, with a central hole to admit air. The pad proper *A* is secured to the metal plate *B*, which has a bridge *D* provided with a loop *G* on its under side for the collar strap to pass through, and a loop &c. *E* on its top for the hame strap to catch in.

**21,146. Allison, H. J., [Turney, C.]** Dec. 29.

Bridles, blinkers for. Where blinkers are usually employed a spring pad *B*, Fig. 2, is fixed to the inner side. This pad is released when it is desired to quiet the animal by pulling the cord *E*, and

thus withdrawing the pin D from a loop attached to the pad and passing freely through the blinker. Where blinkers are not usually employed a spring



flap B, Fig. 6, is hinged to the cheek strap, a spring catch M operated by the cord E being arranged to hold the flap normally back.

21,223. Meyer, G. Dec. 30.

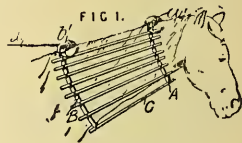
Bits.—The joint between the mouth-bar and the cheeks is made at some distance from the animal's mouth, so



as to prevent injury to the latter. The mouth-bar *a* is formed with T ends *c*, the lower arms of which are preferably longer than the upper. These arms are either solid or tubular, and have curved cheeks *d* pivoted at the ends of them. Straight cheeks may be similarly pivoted to the tubular-ended mouth-bar.

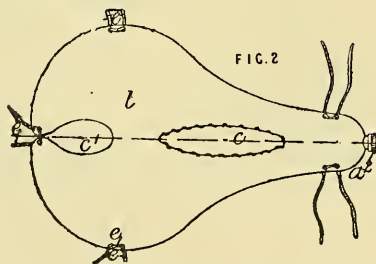
21,293. Huntton, W. W., and Perkins, A. F. July 19, [date claimed under Sec. 103 of Patents &c. Act, A.D. 1883].

Neck pokes.—The poke consists of rigid rods or bars C, united at their ends by two neck straps A, B, the front strap being smaller than the other. There may be pads *a*¹, *b*¹, as shown, and an elastic strap *x* for securing the device to a girth.



A.D. 1891.

98. Meyer, A. J. Jan. 2.



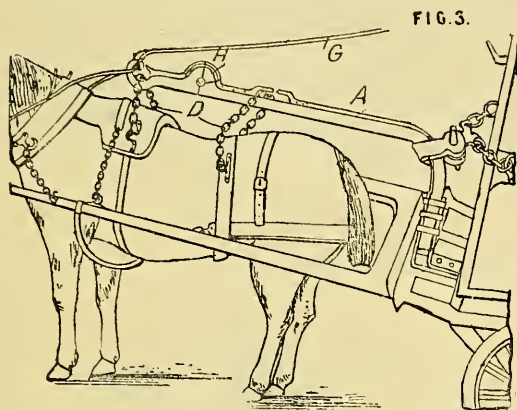
Saddles.—Relates to air or water cushions for velocipede and riding saddles, shown as applied to a velocipede saddle. An india-rubber bag, provided with an orifice (closed by the plug *a*²) for inflating with air or water, is enclosed within a similarly-shaped cover *l* formed of leather or other material.

Ventilating-openings *c*, *c*¹ are formed through the bag and cover. The cover is secured to the saddle by means of eyelet holes and laces *e*. The opening in the cover through which the bag is introduced may be closed by lacing or other means.

265. Schaefer, A. J. Jan. 6.

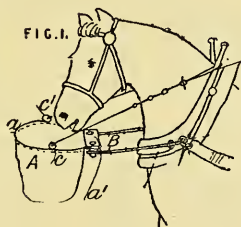
Preventing horses from falling; controlling runaway and restive horses.—A strong pole A projects from the front of the vehicle above the horse, and has attached to it chains D the ends of which are fixed to the harness so as to support the horse if he falls. The front portion of the pole A is hinged as at H, and to it is attached a rope or additional rein G so that the driver, by pulling this rein, can lift the fore part of the horse from the ground, and can thus control a runaway or restive animal.

The Specification illustrates the application of the invention to hansom cabs, vans, sledges, &c.



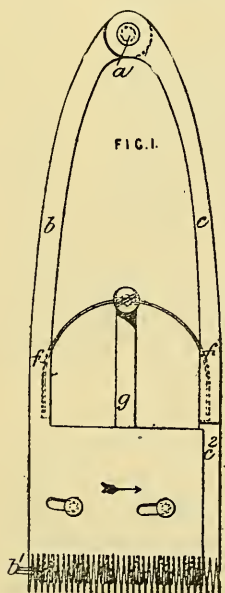
270. Atkinson, G. B., [Atkinson, F. F.].
Jan. 6.

Nosebags.—The object is to prevent the food from being wasted by the animal tossing the bag. The bag A of canvas &c. is attached to a wire ring a provided with eyes c¹, to which the cords or chains c are secured, and a plate a¹, to which the arms B are pivoted. When the bag is in use the ends of the chains and arms are secured to the hames as shown.

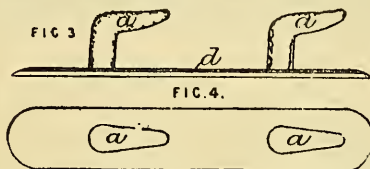


338. Hook, E.
Jan. 7.

Horse clippers.—The knife plate b¹ on the arm b slides over the comb plate c² on the arm c, the arms b and c being hinged together at a, and pressed apart by the spring f on the rod g fixed to the comb plate. The clippers are operated by hand, like the ordinary sheep shears.

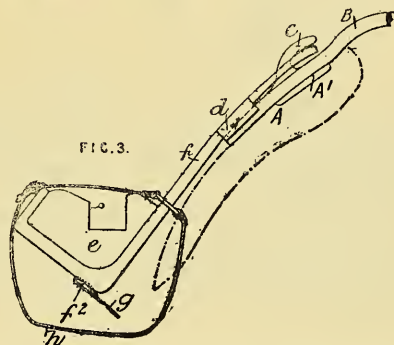


399. Matthews, W. E. Jan. 9.



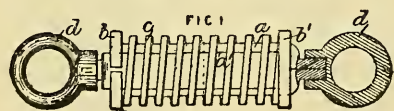
Fastening bridles, shaft-tugs, breeching, traces, &c., hooks for. One or more hooks a, of substantially the shape shown, are attached to a base-plate d which may be formed with loops in any position for attaching straps to it. The plate is stitched, riveted, or screwed &c. to the strap carrying it.

953. Bogle, A. H. Jan. 19.



Saddles.—Relates to improvements in and connected with cavalry and other saddles for securely carrying machine guns, ammunition, &c., even when the animal is moving rapidly. The saddle pads A are secured to the side bars A¹ united by the arches B which are provided with hooks c for the arms f for carrying the load and with bearings d for these arms. The two arms f on each side of the animal are connected by a horizontal bar f² and a girth g unites these two bars. A strap h may be provided for securing the load to the carriers e. The improvements may be adapted to ordinary native camel saddles by dispensing with the arches B and fixing the hooks c and bearings d in any suitable way. The arms f are made long so that the load may be secured without making the camel sit down. An ammunition frame is described in which the ammunition boxes are separately strapped to vertical bars and the whole is fixed to two arms such as f.

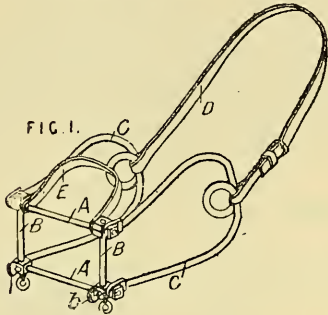
1026. Reynolds, W. R. Jan. 20.



Fastening; traces.—The shank of the hook or link d for lessening the strain on draught harness

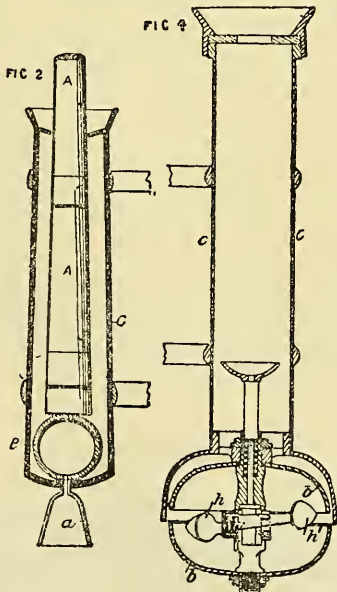
consists of rods *a, a'* of quadrant or other section which slide upon one another, compressing the spiral spring *c* between the washers *b, b'* carried at their ends.

1591. Horn, W. W., [*Halfpenny, J. D., and Dickee, D.*]. Jan. 28.



Bits.—A gag for holding open the mouth of a horse or other animal to facilitate the administration of medicines or for other purposes, and also capable of being used as a bridle bit, consists of a pair of mouth-bars A, one of which is fixed to the vertical rods B, while the other is movable thereon and capable of being fixed in any position by thumb-screws *b*. The bars A are forced apart by springs C. The device is attached to the animal's head by straps D and E.

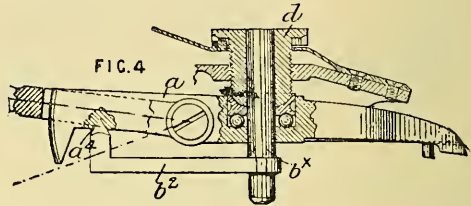
1931. Chesterton, W. J. Feb. 3.



Whips; whip sockets.—Relates to audible signals for use on road vehicles to indicate to the driver

that the whip is in its socket, and to signal to foot passengers. A whistle or horn *a* is fixed to the whip socket C or to the whip A, and the whistle &c. is sounded by pushing the whip in its socket, and so compressing a hollow ball B. Instead of a whistle a bell may be employed. In this case the bell is sounded by depressing a spring plunger and operating ball hammers *h, h'*. The bell *b* is preferably fixed to the whip socket C, but it may be fixed to the whip.

2036. Silver, W. Feb. 4.



Horse clippers and the like.—Relates to machine shearing-apparatus such as that described in Specification No. 17,270, A.D. 1889, and to hand-operated shearing-apparatus. The rear arm *a* of the actuating-lever is supported by the bent arm *b*² the point *a*¹ of which rests in the lever arm, or a pin on the arm *a* may enter a cup in the arm *b*². The arm *b*² is fixed to the pin *b*^x mounted to oscillate in suitable bearings in the nut *d* and the casing. A helical spring may be arranged on the spindle *b*^x between the arms *a* and *b*². The upper cutter in the hand-operated shearing-apparatus is supported in a similar way. Separate pivots may be used for the lever and supporting-arm.

2161. Ritchie, J. Feb. 6.

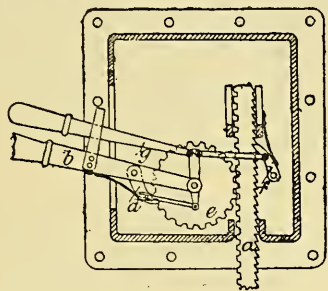
Nosebags.—The bag 10 is formed with a pocket 12 to prevent the food from being tossed out, and with a perforated bottom 13. It is suspended by cords 18 and 19 passing behind the ears of the animal and over the brow respectively. These cords are united by a ring &c. 17 to the cords 15 and 16, which pass through eyes 14 in the bag



2291. Hofer, F. Feb. 7

Saddles; fastening saddle girths. Relates to means for enabling a rider to tighten the girths without dismounting. One end of the girth is attached to a rack *a*, actuated by a ratchet *e* and

pawl *d* on the lever *b*, as shown. To free the girth the lever *g* is operated so as to free the pawls



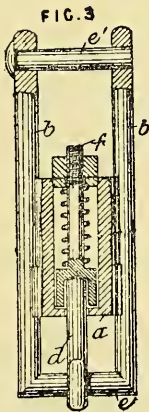
f, d. The appliance is fitted in a frame as shown, which is fixed to the left side of the saddle.

2532. Bailey, E. Feb. 12.

Saddles.—The underside of the saddle cloth or numnah or of the saddle panel is made of woven horse-hair or horse-hair cloth. Over this is placed Egyptian loofah, which forms the upper side of the saddle cloth &c. The saddle cloth &c. is shaped and the edges bound in the ordinary manner.

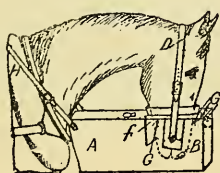
2570. Becker, L. Feb. 12.

Fastening, slip-hooks for. The hook or buckle fastening is for disconnecting the chains, straps, or ropes &c. of harness &c. while in tension. One strap &c. is secured to the bar *e'* of the frame *b*, and a bent link on the end of the other strap &c. is passed over the tongue *d*, which is pivoted to the bar *e* of the frame *b* and held at its point by the recessed end of a spring bolt *f* sliding in the casing *a*. The bolt *f* has an eye (not shown) for the attachment of a releasing-cord. In a modification, the frame *b* is curved and the link over the tongue *d* is straight. In another modification, tongues are also pivoted on the side bars *b* so as to bear against the tongue *d*; three chains &c. may in this way be simultaneously released. In a further modification, the tongue *d* is continued beyond its pivot to form a single or double hook.



2861. Poll, H. S., and Bennett, H. W. Feb. 17.

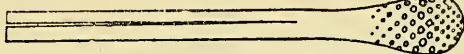
Nosebags.—The bag *A*, of the shape shown, is provided with ventilation holes *G* and a partition *f* which



prevents the food from passing too rapidly from the reservoir *A* to the part *B* where it is consumed. The bag is suspended by straps *H, D* as shown.

3214. Weidenhammer, G. M. Feb. 21.

FIG. 1.

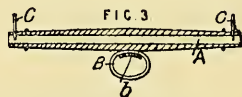


Whips and fishing and other rods and sticks are made of taper form of cane with a core of steel or whalebone &c. and with a natural handle. Two or more longitudinal cuts are made in the stick and long thin wedges of the material are removed, the core is next inserted, and the parts of the stick are glued together so as to give it a taper form.

3320. Steffenson, N. P. Feb. 24.

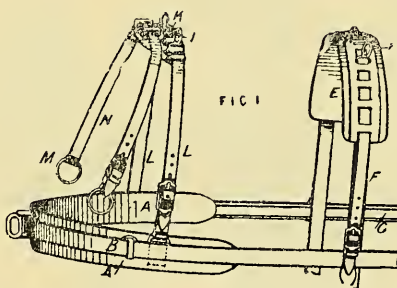
Yokes, neck.—

The yoke consists of a tubular bar *A* having formed integrally therewith, by casting or rolling, a projection *b*



for receiving the eye *B*, which is passed over the pole as usual. The eyes *C* for receiving the collar straps are solid welded rings passing through holes in the end of the bar.

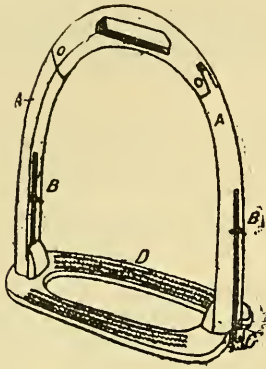
3370. Rutter, A. T. Feb. 24.



Collars, breast; saddles; traces.—Relates to a breast plate and neck strap for draught animals. The breast collar *A* is connected to the breeching by straps *C*, but not to the traces *B*. These, either in one or several parts, run through loops on the breast collar, thus preventing the animal's chest from being chafed. In the same way, the back band *F* and neck strap *L* pass through loops on the saddle *E* and neck plate *K* respectively, the rein guides *I* being secured between the loops as shown. When a bugle pole is used, it is held by rings *M* or straps *N* passing through staples carrying antifriction rollers.

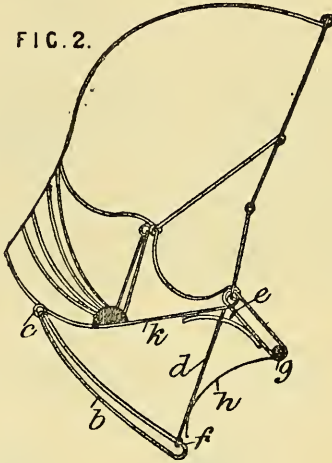
3492. Clarke, T. U., and Seymour, A. W. Feb. 26.

Stirrups, safety.
The arms A are hinged near the eye, and are split at B to form spring catches C engaging in slots in the tread D. The tread becomes disengaged if the rider is thrown.



3598. Canary, F. Le A. Feb. 27.

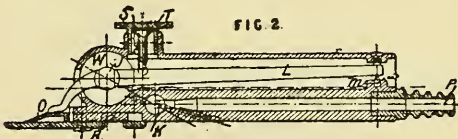
FIG. 2.



Muzzles for animals.—Relates to dog muzzles. The lower part of the muzzle consists of two frames *b* and *d* which are free to turn at *c* and to turn and slide at *e* respectively, and to slide on one another at *f*. A spring *h* keeps the two frames normally flat with the wire *k*. The dog is thus enabled to open his mouth to eat and drink &c., but not to bite any external object.

3670. Brewer, G., [Rochet & Co., L.] Feb. 28.

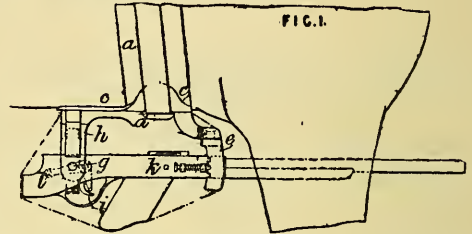
FIG. 2.



Horse clippers and the like.—Relates to clippers for sheep and other animals. The lever *L* working the cutter *O* is pivoted at one end between steel points *m*; it is supported near the other end by a

stud *S* adjustable by a screwed cap *T*, and is oscillated by a piston working in the chamber *W*. The position of the ball *J* on the lever *L* may be adjusted with regard to the piston by set-screws bearing on each side of it. The apparatus is worked by compressed air, which passes through the pipe *P* and is distributed to the chamber *W* by an oscillating valve in the channel *K*. The air escapes by a channel *R* near the blade, thus cooling it and blowing away the dust &c.

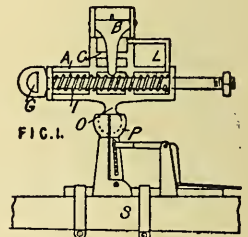
4071. Peel, W. F. March 6.



Small-arms, attaching.—Relates to means for attaching a gun to cavalry harness. The gun is supported in a central position under the horse's body, the muzzle passing out between the fore legs. *a* is a portion of the bellyband, and *b* is a surcingle which secures the plate *c* in position. *d* is a vertical plate attached to the plate *c*, and carrying the rear frame *h* to which the gun *k* is pivoted at *g*, and carrying the front frame *e* provided with notches, as shown, for adjusting the elevation. *l* is a bell-crank lever, to which a string is attached, to enable the horseman to operate the trigger *i*. Or electric or pneumatic firing-apparatus may be used. The method of attaching the gun to the harness may be varied.

4086. Munns, W. H., [Moran, R. P.] March 7.

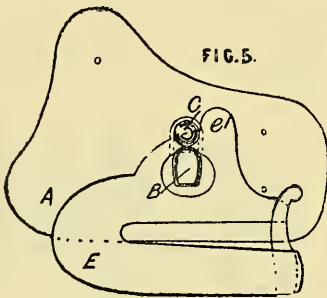
Runaway horses, releasing.—The hame or breast-collar strap is fastened to the loop *G* on the spring bar *I*, the backband is fastened to a buckle or a clamping-lever *B*, the breeching to the loop *L*, and the girth to the loop *C*, all of which parts are carried by a frame *A* provided with the ball *O*, which may be released from the divided socket *P* fixed to the shaft *S* by means of a lever and cord, as shown. In this way a runaway horse may be entirely released by disconnecting the single fastening *O*, *P* on each shaft.



eyes *w* on a piece *v*, which, when turned by levers operated by cords running to the driver's seat, draws the chains and bolts, and liberates the traces or shafts. Fallen horses may thus be released. The pole-chain or strap *k*¹¹, Fig. 10, is secured by an eye *l*¹¹ to the hook *e*¹¹, the mouth of which is guarded by the spring plate *i*¹¹. A runaway horse, when otherwise freed, by continuing its motion thus frees itself from the vehicle altogether. If only partial release is desired the piece *m*¹¹ may be turned across the hook.

Bridles, blindfolding-appliances for. To the inner side of the blinker *a*¹¹¹, Fig. 11, is pivoted a spring flap *c*¹¹¹, which can be released so as to close over the animal's eyes by a pin *o*¹¹¹, which liberates the slide *h*¹¹¹ and cord *j*¹¹¹, and thus to arrest the animal. The flap is drawn back by a cord. The pin *o*¹¹¹ may be drawn by the driver, or automatically by the horse when liberated from the vehicle.

5117. Woodman, H., and Jenkins, J.
March 21.

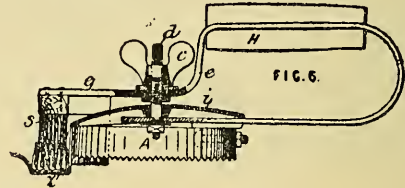


Stirrup straps, suspending, safety saddle-bars for. The stirrup leather is suspended on the lower limb of the piece *E*, provided with the usual spring latch. The piece *E* is held between the hooks or catches *B*, *C*, of which the hook *B* is fixed to the base-plate *A*, secured to the saddle-tree, while the hook *C* is pivoted to the plate, and is pressed down in front by a spring fixed to a projection at the rear of the plate *A*, and acting on the rear of the pivoted hook *C*. A projection *e*¹ on the bar *E* bears against the hook *C*. If the rider is thrown, the hook *C* lifts and frees the bar *E*, and with it the stirrup leather.

5152. Schulz, H., and Stahlecker, E.
March 23.

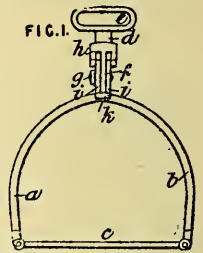
Currycombs.—The comb proper consists of a serrated strip *A* wound into a spiral and attached to a spring strip *e* which carries a handle *H* and a segmental brush *S*. This brush enables a curry-comb to be more evenly used. A bolt and nut *c*, *d* enables the spring strip to be compressed or relaxed, so as to regulate the extent to which the brush *S* projects below the comb *A*. If desired,

the screw *d* may have pivoted to it a curved plate *i* carrying a spiked plate *z* for cleaning the bristles of the brush.

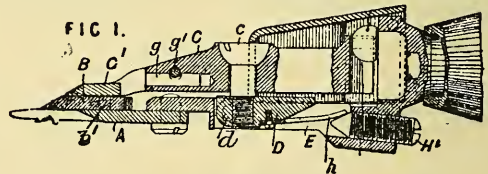


5186. Panzer, C. A. March 23.

Stirrups.—The tread *c* is hinged to the sides *a*, *b* which carry extensions *i* held together by the arms *h* of the T-shaped stem *d* of the eye *e*. The centre piece *f* of the stem is pivoted at *g* to one extension *i*, the pivot passing freely through a hole in the other extension. The centre piece *f* also carries a stop *k* to prevent the stirrup bow from turning backwards with respect to the stem *d*. If a fall occurs, the bow turns forwards till the extensions *i* are free from the overlapping arms *h*, when the side *b* is free to open out.



5317. Burgon, C., and Burgon, H.
March 25.



Horse clippers and the like.—Relates to apparatus such as is described in Specification No. 10,828, A.D. 1890, for shearing or clipping sheep or other animals. The upper cutter *B* is connected to the oscillating lever *C* by a piece which consists of a broad head *G*¹ provided with two pins *b*¹ fitting into sockets in the upper cutter *B* and of a stem *g* fitting into a socket in the lever *C*, and kept therein by a pin *g*¹ which allows twisting but not sliding motion. The pivot *c* upon which the lever *C* oscillates is screwed into a plate *D* hinged at *d* and provided with a spring *h* upon which a set-screw *H*¹ may bear. The spring *h* and the connection of the piece *G*¹ maintain the proper pressure between the plates *G*¹, *B*, and *A* notwithstanding any unevenness caused by re-sharpening and wear.

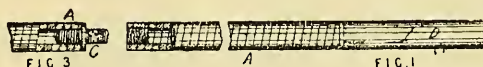
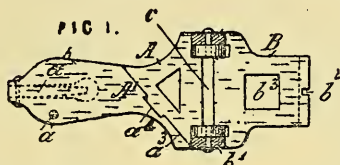
5325. Lee, W., and Patent Woollen Cloth Co. March 25.

Saddle cloths.—The saddle cloth or mat is trimmed with a designed border of felt &c. made separately and printed in colours in any usual way, and attached to the edges of the cloth.

5453. Ashberry, P., and Barnes, W. March 28.

Horse clippers and the like.—Relates to a flexible shaft for sheep shearing or clipping apparatus.

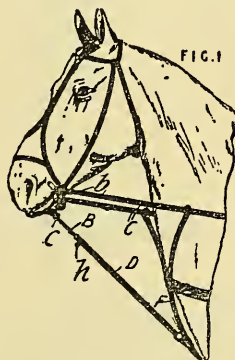
Consists of lengths of coiled wire A, connected by coupling-screws C engaging with threads cut in the ends of the coils, and has at one end a solid or tubular connecting-piece D to fit into the hollow shaft of the driving-gear, and at the other a tubular slotted end piece to connect with the clipper.

**5512. Eulenfeld, F. von.** March 31.

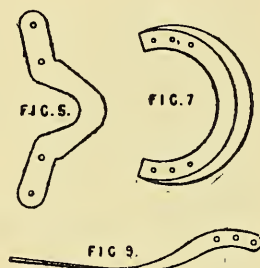
Saddles, tools for use in connection with. A combination tool for use by equestrians &c. consists mainly of two parts A, B hinged together at b¹ so as to leave a slot c when opened. The saddle girth may be tightened by passing its free end through the slot c and pulling the end of the plate A, while the edge of the plate B serves as a fulcrum. The plate A has a cover-plate A¹ hinged to it at a, and this second plate is formed with a notch a¹ for opening stirrup bars and a projection a³ for clearing horses' hoofs &c. A hinged awl a⁵ for boring strap holes rests in a recess beneath the cover-plate A¹. The plate B has an opening b³ to serve as a spanner for screwing up roughing-calks and a notch b² for extracting loose shoe nails.

5647. Munns, W. H., [Mathews, S. E.] April 1.

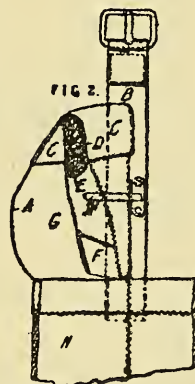
Martingales.—The ends of the bit are secured to a metal fork b hinged at c to the rod B, which may be adjusted in the tube D by a set-screw h. The tube D is fastened to the martingale F, which may be continued beyond the collar to form loops for the reins C. By this apparatus the head of the animal is held up without the use of bearing reins.

**5686. Russell, P. R., and Downing, H. W.** April 2.

Saddles.—Riding saddles are made by stretching raw or green hide when thoroughly moist over a suitable shaping-block and letting it dry upon it. The shaping-block may be in sections for adjustment and have arrangements for heating. The seat thus formed is waterproofed by means of linseed oil or varnish. Felting &c. is introduced within the seat and the curved wooden cantle piece, Fig. 7, and steel front and side pieces, Figs. 5 and 9 respectively, are placed in position and screwed or riveted together. After entirely enclosing these pieces with additional felting &c., the usual flaps and panels are attached.

**5762. Ward, J. R., and Hurman, R. J. E.** April 3.

Nosebags.—Fig. 2 shows a longitudinal section of the bag. To the rear of the top edge of the ordinary bag H and to the supporting-straps B is stitched a flap A, to which is stitched a second flap E, thus forming a pocket G into which the food falls if the bag is tossed up. Elastic bands C and F are attached to the edges of these flaps so as to bring them close against the lower jaw of the animal. A pad D is attached to the flap E.



To keep the bag in place hooks A' are fixed to the straps B to hook into the bridle straps.

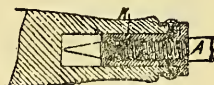
6015. Robinson, G., and Badger, A.
April 8.

Tethering animals; dog leashes and the like.—The hitching straps of halters, ties for dogs, &c. are attached at one end to a spring drum, Fig. 2, or piston contained in a flat circular or a cylindrical case respectively. By this means the slack in the strap &c. is always taken up.

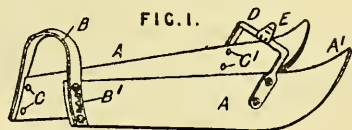


6062. Clark, W. April 8.

Horse clippers and the like.—Handles for double-handed tools such as horse clippers, shears, &c. are attached by screwing, forming a screw thread upon the tang A to screw into a wooden or threaded metal handle or into a threaded socket K attached to a wooden handle as shown.



6308. Kirk, H. April 13.

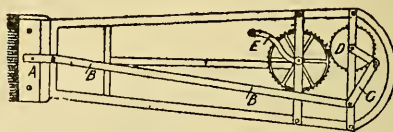


Saddles, military. The tree is formed of two side boards A, A shaped as shown, and connected together by a front arch B and rear arch D of steel, secured to the boards by bolts and nuts C, C'. The rear ends of the side bars are continued at A' beyond the rear arch to form a seat for the pack, the central strap of which is secured to the slotted plate E. The saddle leather is secured to the rear arch D by sewing and to the front arch B by buckled straps. The staples B' are for the attachment of wallets &c. The Provisional Specification states that the arches may be fixed to the side boards by riveting, and that the ends of the cantle arch may be notched to form loops for the outside pack straps.

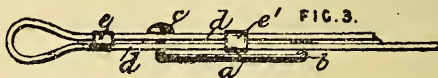
6523. Brown, C., and Franklin, F.
April 16.

Horse clippers.—The blade A is connected by a lever B to the connecting-rod C attached to a crank

on the wheel D, which derives its motion from a second wheel provided with a handle E.



6781. Townson, C. April 20.



Fastening reins and other straps &c., clips for. Fig. 3 shows the fastening forming a rein loop for the bit. Two studs b, c, united by a bar a, are passed through holes in the strap d, the parts of which may be kept together by loops e, e'. In a modification, the studs project on opposite sides of the connecting-bar.

6910. Williamson, G., and Negri, C. de.
April 22.

Tugs, shaft; fastening; traces.—The shaft-tug, Fig. 1, consists of the leather loop S supported by the buckle B provided with a tongue and having

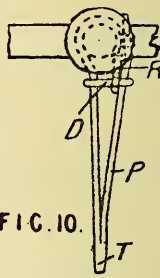


FIG. 16.

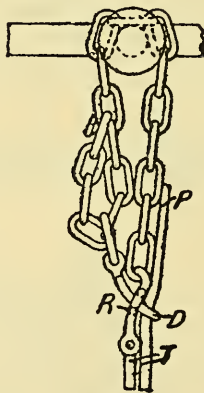


FIG. 10.

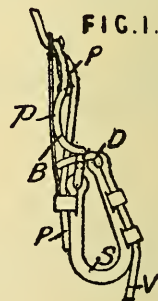
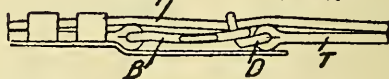


FIG. 1.

FIG. 24.

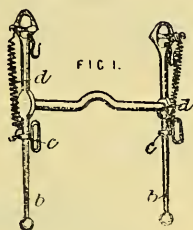


a frame bent to the shape shown, made with three cross-bars between two of which passes the loop D, while the tug is attached to the third. The loop D is carried by the free end of the tug continued to form the bellyband V. The tug is held

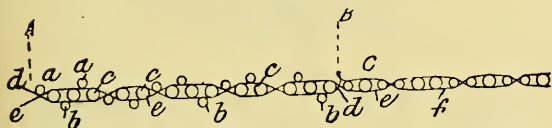
closed by the end P of the backband which passes through the loop D. A "safe" *p* may be arranged behind the buckle if desired. Figs. 10 and 16 show methods of fastening traces to the draw-bar. The trace T, Fig. 10, is split and one end carries a loop R for passing over the loop D, while the other end P passes through the loop D, as shown. In Fig. 16 one end of the split trace T is connected to a chain carrying loops R and D which are secured by the end P as before. Fig. 24 shows a method of fastening the two parts of a trace for pair-horse harness at the point where the trace is supported by the backband. The ends to be joined are connected by loops B, D held together by the strap P of the split trace T. In either modification a fallen horse may readily be released by withdrawing the end P.

7017. Clifford, S. E. April 23.

Bits.—The reins are attached to rings *c*, sliding on the side bars *b*, against the action of springs *d*; thus by pulling the reins firmly the severity of the bit can be increased.



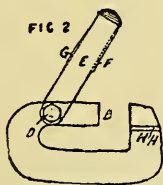
7056. Morton, S., and Holcroft, A. J. April 24.



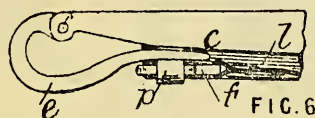
Saddle cloths; clothing for animals.—Relates to the manufacture of saddle mats or rugs &c., specially intended for use in South American States. The border A, B is made in one colour and class of weave, and the body C in another. The border is woven double with fine and thick warps *a, b, c* and wefts *d, e*, while the body C is woven single with similar warps and with weft *e*, and also with a weft *f*, which is made to cross the weft *d*, as shown, the latter being employed only in the border.

7488. Lamplough, A. April 30.

Fastening traces &c., couplings for. The gap B in the chain link is closed by a spring arm E pivoted at D and provided with a lower flange F to catch into the groove H, and an upper flange G to prevent the arm from going too far.

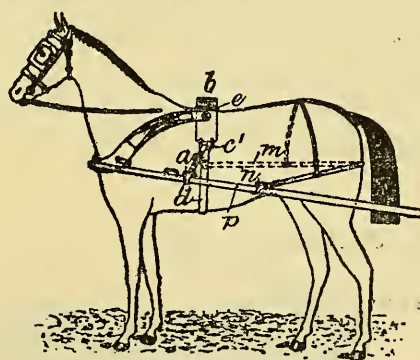


7641. Connell, J. C. May 2.



Runaway horses, releasing; collars, neck; bellybands; bridles; fastening.—The object is rapidly to release a runaway horse from the harness. Fig. 6 shows the end of a hame *c* fitted with a slip-hook *e* the point of which is held by a pin *f* passing through a fixed eye *p* over which the hook passes. The pin *f* is operated by the driver through a cord *l*. The bellyband *h*, Fig. 2, is provided with a hinge *i* the spring joint pin *j* of which may be similarly operated by a cord. The coupling-reins *n, n*, Fig. 4, are secured to the staples *p* on the driving-rein by a pin *q* with a cord *r*. The same means may be employed for fastening other parts of the harness.

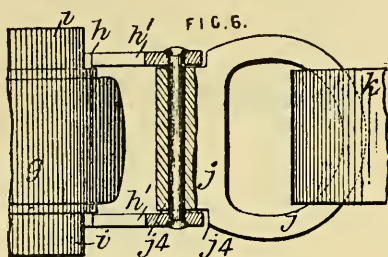
7642. Mendel, A. May 2.



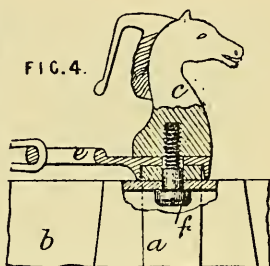
Saddles; breeching; bellybands.—The Figure shows the off-side horse of a pair, for which the harness is mainly used; the collar shown is that described in Specification No. 13,508, A.D. 1889. The saddle *b*, preferably hinged at *e*, carries loops *c'* for the bellyband *d*, which is attached to one loop, and is passed through the other and attached to the loop *a* on the pole *p*. The ordinary pole chains or straps may be dispensed with. If a breeching is used, it is attached at one end to the bellyband *d*, as shown, or to the trace or collar

and at the other end to a loop *n* on the pole *p*. The traces may be fixed in the ordinary manner.

7990. Place, J. R. May 9.

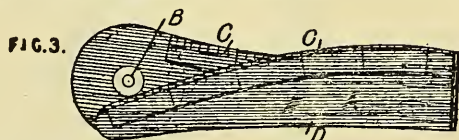


Saddles, harness fittings for. The saddle *b*, Fig. 4, is bestridden by a U-shaped piece *a*, to which is attached by a screw *f* a crupper loop *e*, preferably elliptical, and a bearing rein hook or bracelet *c*, which are shouldered or recessed to fit into a notch on the top of the piece *a*, as shown.



Collars, breast; fastening pole straps, shackles for. The pole strap *k*, Fig. 6, is attached to the breast collar *i* by a loop *j* pivoted between the arms *h'* carried by the base-plate *h* which is fixed to the breast collar. The loop is shouldered at *j'*, as shown, to limit its motion. The trace *g* runs freely over the breast collar and between the arms *h'*. The breast collar is connected to side straps, which are buckled to the ends of a breeching strap.

8321. Jackman, J. May 14.

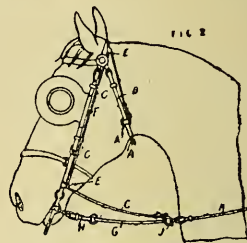


Measuring.—The withers and backs of horses &c. are measured for saddles &c. by an appliance similar to a pair of callipers, shown in Fig. 3 in its folded position, and consisting of two hinged arms *A* pivoted together at one end *B*. One of the curved edges *C* is used for measuring the withers and the other *D* for the back.

8411. Henshaw, T. S., [Avit, L.]. May 15.

Bridles; stopping runaway horses.—

The horse is controlled by a band *A* which compresses the windpipe. This band is attached to a ring *A'* on a strap *B* fastened to the cheek strap. A smaller strap *C* passes from the ring *A'* over the pulley *E* and through loops *F* and a second pulley *E* to the ring *J* on the end of the rein *K*. An elastic strap *G* connects the ring *J* and the bit strap *H*. By pulling the rein very firmly the strap *G* stretches and the straps *C*, *A* come into action. For saddle horses the strap *C* may be continued to form a second rein. The above arrangement of straps is preferably the same on each side of the head; but by fixing one end of the strap *A* this is not essential.



8451. Briesen, O. von. May 16.



Bridles.—Restive horses &c. are restrained by blindfolding them by means of a spring flap *b* which is hinged to a plate *p* fixed to the cheek strap *n*. The flap *b* is suitably padded on the side next the horse's eye, and is released by a cord *l'* acting on a catch *k*. The flap is brought back, after the animal has been quieted, by a cord *l*. To prevent disturbance of the position of the plates *b*, *p*, dowel pins are fixed into one plate near the hinge to fit into sockets in the other plate.

8466. Kerr, W. A. May 16.

Bits; bridles.—The snaffle bit, Fig. 1, has rein rings *c*, double cheeks *a*, *b*, cannons *d* pivoted to the cheeks, and a port *e* pivoted to the cannons and shaped outside to fit the animal's palate and inside to fit the tongue. The cannons may be made of different degrees of severity, thus they may consist of jointed bars covered with rubber, leather, &c., or rigid covered bars or plain uncovered bars or twisted bars. For animals with one-sided mouths one of the cannons may be different from the other. To the ring *c* are attached the rein *h*, Fig. 4, and the cheek strap *k*, which may be connected by a small strap *j* to the bit cheek *a* or be fixed to a

loop formed on the cheek. To obtain greater control while riding there may be a second ring *f*, Fig. 4, for a second rein *g* which forms a noseband at the part *i*. In another form, Fig. 5, for driving,

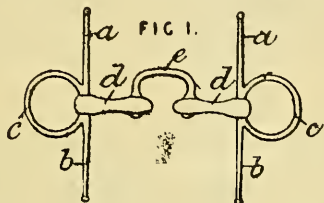


FIG. 4.

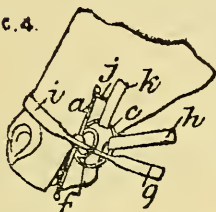
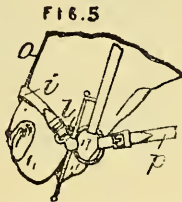


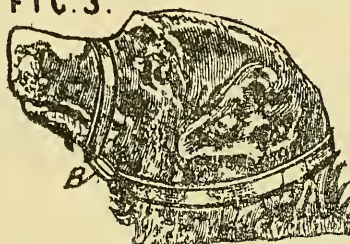
FIG. 5.



a separate noseband *i* suspended by a strap *o* is attached to rings *l* on the bit. The rein *p* may pass through the turrets on the collar and through the rein rings and be carried back and fixed to the breeching. The nosebands are lined with curb chain to make them more effective.

8476. Ripley, R. May 16.

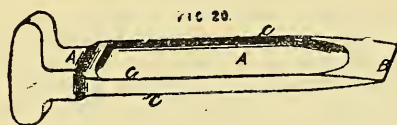
FIG. 3.



Muzzles for animals.—A chain or perforated strap &c. carries a ring *B* near its centre. The ring may be split or have a spring opening &c., or may be replaced by a buckle. The ends of the chain or strap may carry hooks. In arranging the strap as a muzzle the ring *B* is placed beneath the neck as shown, and the straps on either side are looped round the neck and nose respectively. In a modification, the chain &c. carries a ring at one end, a hook at the other, and a short branch chain between the two. A noose is formed for the neck of the dog or other animal, and the chain is then brought down the animal's forehead and looped round the nose, the branch chain forming an under connection between the two loops.

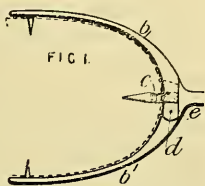
8862. Ibbotson, A. B. May 25.

Tethering animals.—Relates to spikes, nails, pegs, and the like, applicable, among other purposes, for tethering animals. The object is to form a large bearing surface, and to facilitate driving. The Figures show two examples from the many forms illustrated in the Specification. The shank is formed on the front, and on the back and sides also if desired, with a groove or grooves *A*, preferably rounded, which run out upon the chisel point *B*. The point is arranged transversely to the direction of the pressure the spike is intended to resist. The edge *c* may be tempered or case-hardened and sharpened. The neck *A* may be rectangular or circular in section, and of the same or less width than the lower part of the shank, which may be considerably flattened out as shown in Fig. 20. In tethering-pegs a ring is fixed to the head.



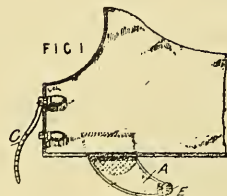
9076. Oster, J. May 28.

Spurs.—The stem carrying the rowel is made separate from the bow, and is formed with a screw *c* screwing into the end of the arm *b*¹, which is pivoted at *d* between the forked ends of the other arm *b*. The bow is first fixed to the heel, and then the stem is screwed up till its point enters the heel and its shoulder *e* abuts against the bow.

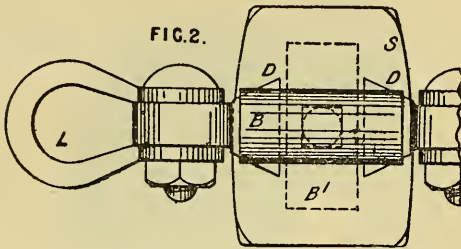


9619. Cawdle, T. H. June 6.

Elbow pads; clothing for animals.—Padded flaps *A* are fixed to a horse cloth to protect the elbow joints of the animal when lying down. The flaps are secured round the four legs by straps *C* and buckles *E*.

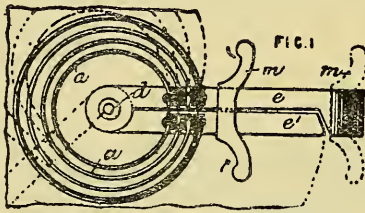


9649. Green, F. W., and Swann, G. A.
June 6.



Fastening pole-chains, shackles for. The pole-chains are attached to shackles L hinged to dovetail pieces D which slide in grooves in the pole cap S, and are kept in place by a spring turn-button B. The button B has to be pulled out a certain distance before it can be turned into the position shown in dotted lines B', so as to clear the sliding pieces D.

9873. Schulz, H., and Stahlecker, E.
June 10.



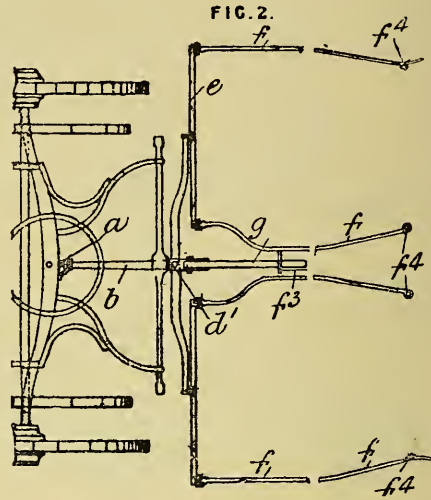
Currycombs.—The comb is designed to be readily cleaned. It is formed of several concentric serrated strips *a* fixed at their ends to the bars *e*, *e'* which are hinged at *d* and held together by a sliding piece *m*. On sliding back this piece the bars *e*, *e'* spring apart by the elasticity of the strips *a* and shake out the dust and dirt accumulated between the strips. A handle is fixed to the bar *e*, which may carry a curved brush concentric with the strips *a*. A spiked plate pivoted at *d* may be added to clean this brush.

9939. Boulton, A. J., [Fraas, G. A.]. June 11.

Runaway horses, releasing.—Instead of the usual pole and traces, four shafts or limbers *f* hinged to whipple-trees *e* are provided. The front ends of the shafts *f* are pivoted to plates on the harness by pins passing through the holes *f'*, and to these pins are attached cords by which the driver can pull them out to release the horses in an emergency.

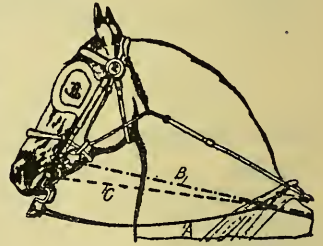
(For Drawing see next column.)

9939.

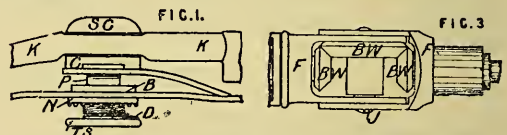


9994. Hughes, C. T., [Koechlin, P.]. June 12.

Bridles.—Instead of the separate leather rein attached to the snaffle or to the upper part of the curb bit, a short elastic rein B or C is used, which is connected to the rein A near the crupper. The forward end of the more powerful leather rein A only comes into use when the rider or driver exerts sufficient force to considerably extend the rein B or C.



10,572. Ashberry, P., and Barnes, W.
June 22.

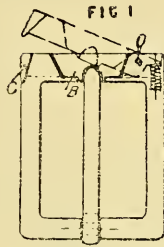


Horse clippers and the like.—Relates to improvements in the apparatus described in Specification No. 6962, A.D. 1890, comprising a means for adjusting the tension of the lever on the cutters, a universal joint, and a means for attaching the comb. Fig. 1 shows the tension mechanism. The lever K is drawn down by the tension-screw TS, which screws into the interior of the pin P provided with a head SC and screwed collar C between which, with ball bearings, the lever oscillates. The tension-screw is prevented from slacking back by a

catch D taking into notches in the nut N which screws on to the bushing B. The joint, Fig. 3, is formed by three bevel-wheels BW carried respectively by the motor shaft, the cutter shaft, and the hinge J of the frame F. The comb is attached by bolts and nuts, the bolt heads being external to the casing and the comb slotted for the bolt shanks.

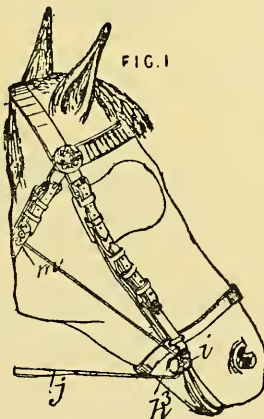
10,622. Morand, G. June 22.

Fastening traces, shaft-tugs, or pole-chains. Relates to a buckle and fastening for harness &c. The buckle is constructed with an opening front bar B pivoted at O and held in its closed position by a spring. C is a roughened surface for the thumb or finger in opening. A similar device may be applied to collar swivels, whipple-trees, or shaft carriers.



10,712. Webb, J. June 23. [Patent refused.]

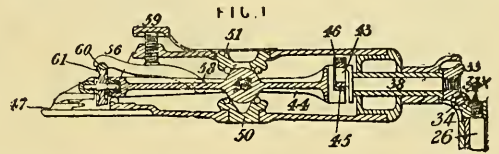
Bits; bridles.—The guiding and bearing reins are combined to form a single rein *j*, which passes through eyes in the loop *h*³ formed on the bit, which has a plain mouth-bar, and is attached to the cheek-straps by loose loops *i*. For a saddle-horse a second rein is attached to the loop *h*³. The rein *j* is attached to the throat strap, or is carried back through loops *m* to the saddle, to which it is fixed, or beneath which it passes to the crupper, the rein in either case passing above the back of the animal. The various loops are provided with antifriction rollers. The direction in which the combined rein is led through the bit cheeks may be reversed. The Specification shows the forms of loops &c. it is preferred to employ throughout.



10,750. Newall, J. W. June 24. Amended.

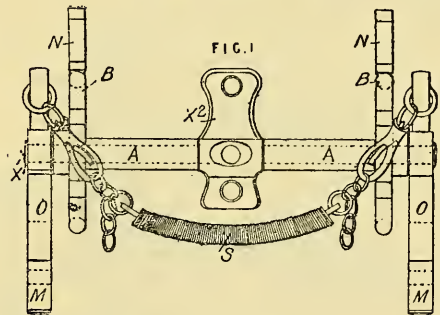
Horse clippers and the like.—Fig. 1 shows a sectional elevation of one form of a clipper for shearing hair or wool. Motion is transmitted between the spindles 26 and 38 by bevel-wheels 33, 33^x which rotate in casings hinged together at

34. The spindle 38 drives the oscillating lever 44 by the crank-pin 43 carrying a specially-shaped roller 45 fitting in a block 46 which reciprocates vertically in the forked end of the lever 44. This



lever is formed with a ball in the centre which is held between the pieces 50, 51 carrying antifriction balls. In a modification, the lever 44 is pivoted on gimbals. The end of the lever is pressed down on the cutters by a screw 59 bearing on a forked piece 56, pivoted at 58, and carrying a specially-shaped rocking piece 60 for bearing against the roller 61 on the lever. An end piece is formed with three or more fingers specially rounded at the ends so as always to bear evenly on the cutter 47. This end piece may have a rounded shank to turn in the lever made tubular at this part. The lever 44 may be cushioned by side springs.

10,924. Boury, A. A., Champagne, A., and Schmidt, E. June 26.

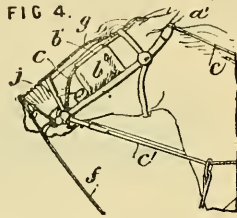


Bits.—The mouth-bar consists of an internal rod *X*¹ carrying a flat piece *X*², and enclosed in the sleeves *A*, *A*. The mouth-bar passes freely through the cheeks *B*, and is firmly fixed to the levers *O* which carry the curb chain *S*, as shown, from their upper ends, and at their lower ends are formed with loops *M* for an extra pair of reins. The cheeks *B* are formed with loops *N* for the cheek straps, and with other loops (not shown) for the ordinary reins. With these latter reins the animal is controlled unless it becomes unruly, when the extra pair is used, causing the plate *X*² to rotate and force apart the tongue and the roof of the mouth, notwithstanding that the sleeves or rollers *A* may be gripped between the teeth.

11,533. Dannhauser, L. July 7.

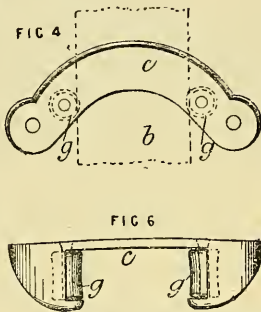
Stopping runaway horses.—A runaway horse is controlled by obstructing its vision and respiration.

The blinkers *b* may be drawn close to the eyes by a rein *c* passing from the bit through loops *b'* and *a'* back to the driver. A bag *j* suspended by straps *e* and *g* may be drawn over the nose by the rein *f*, passing between the fore legs and along the trace, and so back to the driver.

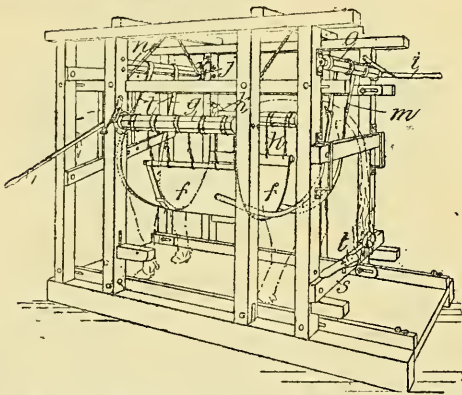


11,547. Willis, F. July 7.

Saddles, harness.
Relates to beads for harness saddles, one form being shown in plan and elevation respectively, in Figs. 4 and 6. The sides of the bead *c* are provided with one or more anti-friction rollers *g* for the backband *b* to work against.



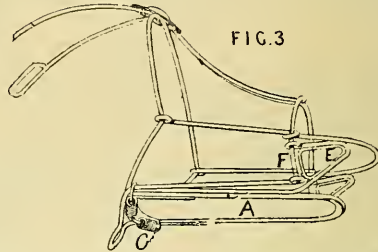
11,751. Davies, G. July 10.



Animals, stocks for holding; slings, lifting.—Relates to stocks for holding horses, bulls, and other animals, for farriery or veterinary purposes. A belly blanket or apron *f*, by means of which the animal is raised from the ground, is suspended by chains *h* from rollers *g*, mounted in the sides of a timber framework, and by straps *m* from transverse rollers *n*, *o*. The rollers are rotated by levers

i, and are held in any required position by ratchets and pawls *j*, *k*. The legs of the animal may be secured to a cross-beam *s* by straps *t*.

12,062. Mohr, C. July 16.

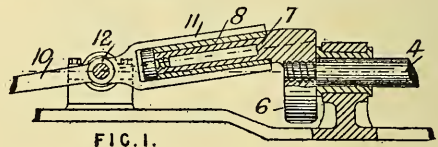


Muzzles for animals.—A muzzle for dogs &c. is formed with a leather &c. plate *A* connected to the frame at the back by a spring hinge *C*, and at the sides by the projecting wire *E* formed at the end with a loop to slide freely on the wire *F*. In a modification, the wire *F* is formed into a long loop, in which slides the wire *E* which is continued back to join the plate *A*.

12,246. Williamson, H. W. July 18.

Nosebags.—The supporting-straps are formed with springs which gradually lift the bag as its contents are consumed.

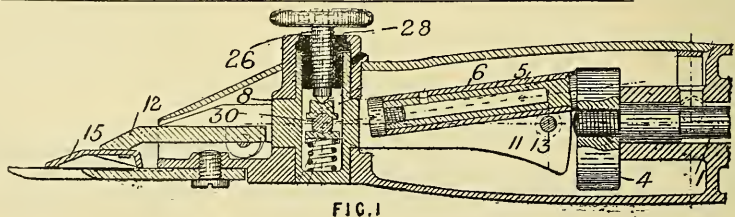
12,473. Virtue, W. W. July 22.



Horse clippers and the like.—Consists of pin and slot mechanism for converting rotary motion into reciprocating, applicable for use in shearing and clipping machines &c. The fulcrum *12* of the oscillating lever *10* is in the plane of the axis of the driving-shaft *4*, which carries a disc *6* formed with a pin *7*. The pin is surrounded by a bush *8*, fitting between the horns *11* of the lever; its axis is inclined and intersects that of the shaft at the fulcrum of the lever. The apparatus may be arranged for the lever to oscillate in a horizontal plane, and the details of the mechanism may be varied.

12,476. Moffat, J., and Virtue, W. W. July 22. Amended.

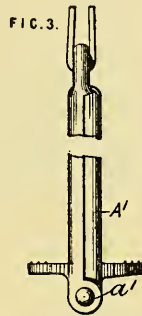
Horse clippers and the like.—Fig. 1 shows one form of apparatus, in which the motion is communicated to the



oscillating bar 11 by the pin 5, fixed to or in a piece with the balanced crank 4, so that its axis prolonged intersects that of the shaft 1 on the axis of the pivot 8 of the bar 11. The pin 5 is hollow to hold oil for lubricating, and is surrounded by a sleeve 6, square externally, which reciprocates between the forked bar 11. The forked tension bar 12, pressing on the cutter 15, is hinged at 13 to the bar 11, and is pressed down by the screw 26 passing through the nut 28, and bearing on the pin 30 which bridges the forked bar 12 and passes through slots in the bar 11, which is thus unaffected by any adjustment of the tension bar. In a modification, the pin 5 and the sleeve 6 are pivoted respectively to the crank 4 and bar 11, and the parts 8 and 28 are in one piece. In a further modification, the tension lever 12 is pivoted between the rear ends of the forked bar 11 and the tension-screw 26 bears directly upon it. The lever 12 may also be pivoted at the front end of the bar 11, becoming thus a lever of the first, instead of the third order. In another modification, the bar 11, is pivoted behind the crank, and the tension adjustment is effected by means of a mushroom-shaped pin. In other forms, the lever 11 swings on knife-edges, or the sleeve is prolonged beyond the axis of the bar 11 in the form of a fork, which either embraces or passes between links corresponding to the bars 11, 12. Special means are described for connecting the bar 12 and the cutter 15.

12,502. Elliott, R. P. July 23.

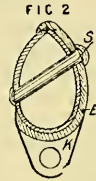
Stirrups.—The bow is split so as to form a second bow A', which is hinged to the first at a', and when turned down serves as a mounting-step.



12,704. Wheway, S. B. July 27.

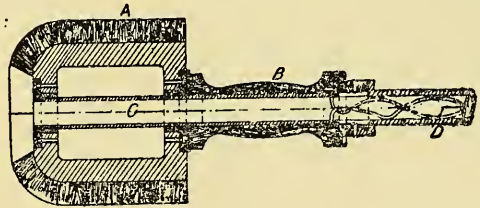
Collars, neck, hames for.

Fig. 2 shows a transverse section across the hame near the draught-hook. The eyes K which carry the vertical bolt upon which the hook is pivoted are secured by rivets S passing through the hame E in the direction shown. The hame may be encased in two or more thicknesses of steel &c. for extra strength.



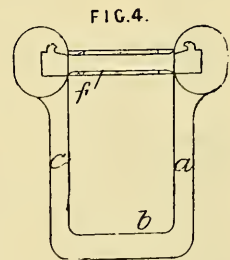
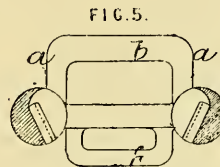
12,835. Niederer, A. July 29.

Brushing-apparatus for grooming.—Relates to a rotary brush for cleaning horses &c. The brush A is mounted on a spindle C which passes through the tubular handle B and is connected to a flexible shaft D. The spindle may be lubricated by a wick or sponge soaked in oil, and both spindle and shaft are hollow to allow compressed air or water to be directed on the part of the animal being cleaned.



13,263. Dymond, G. C., [Hauser, E.]. Aug. 5.

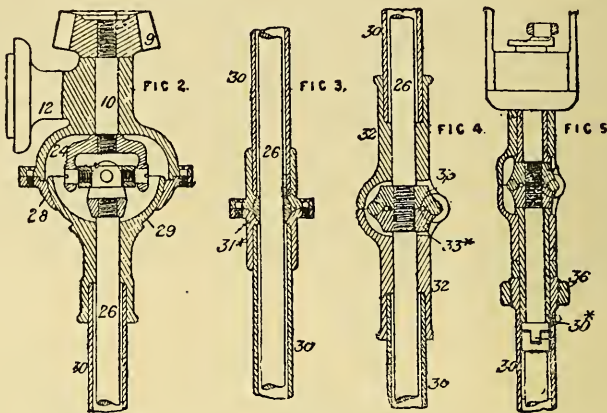
Runaway horses, releasing; fastening traces. Consists of a slip-link for releasing traces. Fig. 4 shows an elevation of the link, and Fig. 5 a plan partly in section. It consists of a curved U-shaped piece a, b, a, closed at its upper end by a specially-shaped sliding loop f, to which the releasing-cord is attached. The trace is attached to the part b, and is fastened to the vehicle by forming a noose with the link, so that, by pulling the releasing-cord which passes through loops on the rein, backband, and trace, the piece f is pulled out and the trace set free.



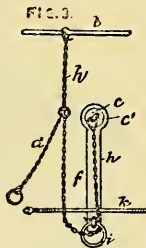
13,332. Newall, J. W. Aug. 6.

Horse clippers and the like.—A flexible shaft for sheep-shearing apparatus &c. is composed of sections of rigid shafting 26, Fig. 4, connected by variable bevel-wheels 33, 33* and rotating within sections of rigid sheathing hinged together by means of sockets 32, 32. It is connected to the shaft by which it is driven or to that which it is to drive, or to both, by a Hooke's joint as shown in Fig. 2. This Figure shows the top joint; the short spindle 10 carries a pinion 9 which gears with a wheel on the overhead driving-shaft when the apparatus is driven by power, and is supported in a bracket 12 fixed to one of the main bearings. To

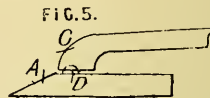
a dome, formed on the lower end of this bracket, is secured a cap 28 forming with the part 29 a ball-and-socket joint concentric with the Hooke's joint. A modified arrangement for connecting the shaft with the shear is shown in Fig. 5. The end of the sheath 30 is split and clamped by means of a screw collar 36 on the removable section 30* which embraces a removable section of the shaft. An intermediate bearing for the sections of rigid shaft is shown in Fig. 3. The shaft passes through a ball 31* held tightly in seats formed in sleeves rigidly secured together and to the ends of the sections of a sheath 30, 30. The overhead driving-shaft may be supported on a pillar and driven by a rope or chain from a handle-wheel or can be driven by power.

**13,505. McDonald, A. Aug. 10.**

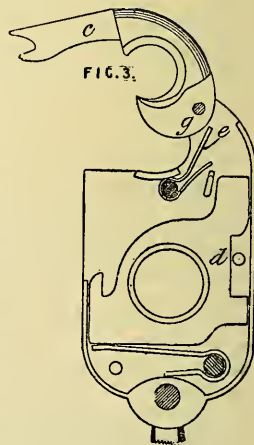
Tethering animals.—The halter chain *d* is attached at one end to the headstall, and at the other end slides upon a rod or chain *h* fixed in various ways. Fig. 3 shows one way of arranging the latter chain. Its upper end slides on a bar *b*, and its lower end is connected by rings to a bar *f* pivoted at *c*, and working beneath a bar *k*. The bars *b*, *f*, and *k* are all secured to the manger. In a modification, the lower end of the chain slides on the bar *k*, the bar *f* being dispensed with. The bar *k* may also be dispensed with, the lower end of the chain *h* being then fixed. The chain *h* may be replaced by a rod, and the bars *b* and *k* may be replaced by slots in the manger.



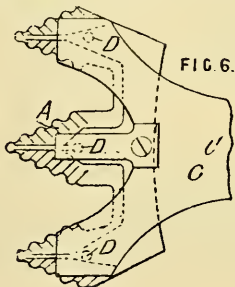
formed with a serrated or crenated edge to obtain a better hold of the wool.

**13,972. Shepherd, F. Aug. 19.**

Fastening pole-chains and traces, slip-hooks for. Relates to improvements in the slip-hooks described in Specification No. 13,609, A.D. 1889, for releasing fallen horses. Fig. 3 shows the hook with the front plate removed. The hook proper *c* is extended at *g* to bear against the back of the case when closed and so relieve the strain on the pivot. The spring *e* bears against the extension *g*. The sliding spring catch *d* for the hook *c* is unaltered.

**13,654. Wolseley, F. Y. Aug. 13.**

Horse clippers and the like.—In sheep shears the cutters *A* are made with projections *D* to take the pressure of the ends of the fork *C*, preferably thickened and recessed at this part. The cutters are also



14,256. Parkes & Gnosill and Parkes, J. Aug. 24.

Collars, neck, hames for. The eye for the throat tackle at the end of full and half-cased hames is made by brazing a finished bored plug *a* into the casing *A*. By this means the casing can be made of better steel than is possible in the usual welding process. The plug is preferably shouldered as shown, and may be wholly enclosed in the casing, which is then perforated to correspond with it.

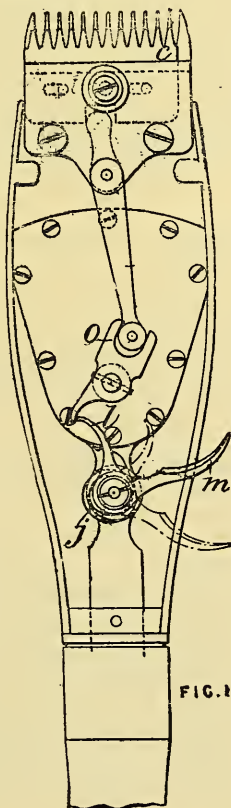
FIG. 4.

**14,266. Humm, M., and Humm, A. E.** Aug. 24. *Drawings to Specification.*

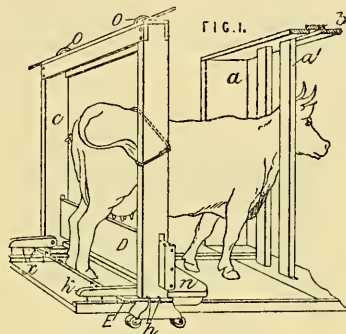
Knee-caps; horse-boots; pads.—Relates to leg-baths, bands, pads, knee-caps, neck-pads, and similar devices for applying electricity for curative purposes. The pads &c. are made of leather or canvas on the outside, and of rubber-covered cloth or other suitable insulating-material on the inside, to which latter are fastened metal plates joined to each other and to the source of electricity by conducting cords or wires.

14,298. Cole, W. Aug. 24.

Horse clippers and the like.—Relates to a motor of the oscillating-vane type, which is intended mainly for obtaining an oscillating or reciprocating motion in sheep shears, horse clippers, and the like. The invention is shown as applied to sheep shears. The piston or vane oscillates a fork *o*, from which, by a suitable lever connection, motion is communicated to the working cutter *c*. The object of the present improvement is to prevent the piston from stopping at the dead point. This is provided for by a spring lever *m* adapted to be acted on by the forefinger, and connected to the cut-off valve *j* of the fluid-supply pipe. By the action of the spring this lever normally tends to close the cut-off valve and to keep it closed until



opened by the operator. The stopping of the piston at the dead point is prevented by an extension *l* of the lever *m*, which abuts against an arm on the fork *o*, and, whenever the lever is released, operates to thrust over the piston into a position suitable for re-starting.

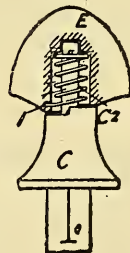
14,351. Palmer, C. C. Jan. 26, [date claimed under Sec. 103 of Patents &c. Act, A.D. 1883].

Animals, appliances for holding.—Relates to apparatus for holding cows while they are being milked. The head is held between stanchions *a, a¹*, the latter of which is removable and is held in position by a pivoted catch *b*. The hind legs are held by a frame *c* and its attachments, which can be removed bodily by ropes passed through eyes *O* at the top. The legs are held between a fender board *D*, passed through slots in the frame, and a bar *E* sliding through eyes *h*, and retained in position by the pegs *x* of the pivoted arms *k*. A rope attached to the uprights of the frame is passed over the cow's back. A board *n* sliding on guides is provided to stand the pail upon. The frame *C* is provided with runners *o* that it may be easily moved along the stall into position.

14,557. Gobron, A. Aug. 28.

Fastening traces. Consists of a fastening-device chiefly applicable for securing the ends of traces on the futchel bolts of carriages. The button *E* is hollowed out to receive a helical spring *C²* which is fixed to it at *I*, the other end of the spring being fixed to the spindle upon which the button is mounted, and which is formed on the end of the bolt *C*. The upper face of the bolt and the lower face of the button may be half-checked together, so that the button cannot rotate until the spring is compressed sufficiently to enable the shoulders of the half-checked portions to clear each other.

FIG. 1.



14,683. Mallet, C. Aug. 31.

Whip sockets.—A spring neck *a* is formed by a rubber cord or coiled spring *b* threaded in and out in any suitable manner. Instead of being a continuous cord the spring may be in sections.

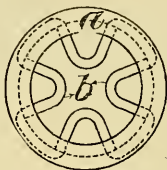


FIG. 1

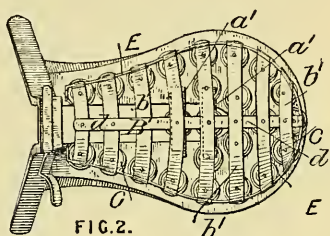
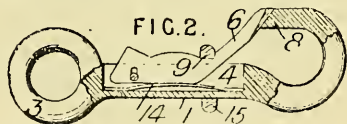
14,863. Heermance, De W. Feb. 14,
[date claimed under Sec. 103 of Patents &c. Act,
A.D. 1883].

FIG. 2.

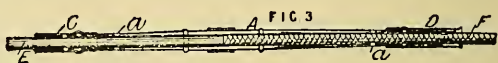
Saddles, riding. An upper saddle-tree or seat is formed of brass strips *b*, *b'*, *d* attached to a steel rod *E* and supported upon the lower saddle-tree of ordinary make by conical springs *C*. Cross-bars *a*, *a'* are arranged to support some of the central springs as shown.

15,114. Clary, J. Sept. 7.

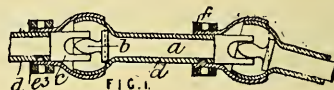
Fastening, hooks for. The tongue *6* is loosely pivoted in a slot *4* in the shank *1* of the hook *8*, provided at *3* with a loop. A spring *14* is arranged beneath the tongue *6*, and a ring *15* is adapted to slide over the shank and tongue. The top of the tongue is shaped as shown, so that, when the ring is seated at *9* or at the tail, the tongue is kept securely shut or open.

15,314. Morris, M. Sept. 10. *Drawings to Specification.*

Collars, neck.—The collar is of thin sheet metal, woven wire, or cane covered with leather and made hollow to contain sand &c. which, as the horse is travelling, is jerked out of a spring-controlled opening.

15,392. Moulton, H. T. Sept. 11.

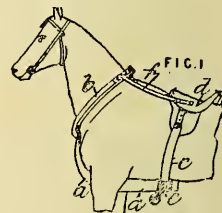
Whips.—Relates to means for connecting together a whip stock and its lash or thong. A metal tube *A*, split at the ends and provided with teeth *a*, is passed over the parts *E*, *F* to be connected, and the ends of the tube are then compressed by the sliding sleeves *C*, *D*. The whip lash or thong may have an eye at its inner end to engage with a hook in the centre of the tube. It is stated in the Provisional Specification that the tube *A* may be split throughout, that there may be a central sliding sleeve, and that the sleeves may be operated by means of screws.

15,853. Burman, W. H., and Bodington, J. Sept. 18.

Horse clippers and the like, flexible shafts for driving. A series of sections *a*, forked at one end *c* and formed at the other end with a tooth *b* of the shape shown, engage one with another and one enclosed in a casing consisting of a series of bulb end tubes *d* connected by means of loose shells made in two halves connected by nuts *f*. These shells are locked to the tubes by projections *e*, and to the bulb ends by slots fitting over pins thereon.

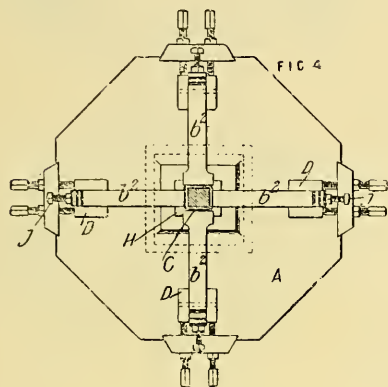
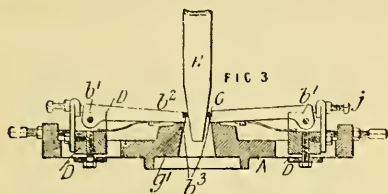
16,077. Lindemann, O. Sept. 22.

Draught from bar between fore-legs.—The traces are attached to a bar *e* fixed transversely in the end of a bar *a*, supported at one end by the collar *b*, and at the other by the girth *c*. The collar *b* is connected to the saddle *d* by two metal strips *f*.

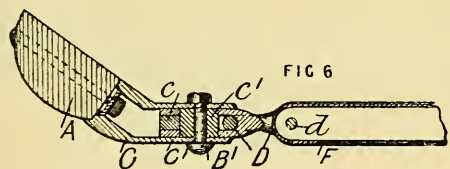
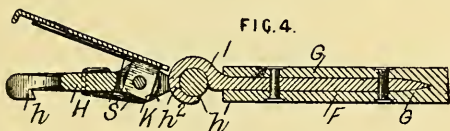
**16,356. Blakemore, J.** Sept. 26.

Fastening, couplings for. The apparatus is designed for finishing harness buckles, links, &c. The buckle &c. *C* is placed on the ledges *b*³ at the end of four levers *b*² pivoted to blocks *D* adjustable on the base-plate *A*. The inside and outside of the buckle &c. are shaped by the mandrel *H* and by the descent of the levers *b*² which rest against the boss *g*¹. The levers *b*² when

released are raised by springs till their ends b^1 abut against stops j . The number of levers b^2 may be varied.



16,561. **Bricknell, S. E.** Sept. 29.



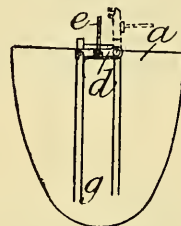
Collars, neck ; fastening.—Relates to hame tugs. The trace G , Fig. 4, is riveted to a hook I with a pointed shank, and the hook engages with the looped shank h^1 of the hook H , part h^2 of the loop being reduced to enable the hook I to be disengaged from it. The end h of the hook H is forced into engagement with slots in the tube F , Fig. 6, by a coiled spring S protected by a pivoted plate K with limited motion. The sleeve F is attached to the hame A by a Γ -shaped link D , the arms of which are united by a pin d . The link D is embraced by a metal strap C^1 provided with a separate filling-piece c and a removable block c^1 to take the wear of the bolt B^1 . This bolt secures the strap to the yoke C bolted to the hame A . For long

hame-tugs the tube F is connected to the link D by an intermediate tube and link.

16,662. **Baker, W.** Oct. 1. *Amended.*

Saddles, harness. The object is to enable a horse or other draught animal to be unharnessed from a vehicle without removing the shafts from the tugs. The back-band is held in the trough g of the saddle a by parallel bars d on which the terret rings e are fixed. On unfastening the bellyband, breeching, and traces, the shafts may be lifted clear of the saddle.

FIG. 3.

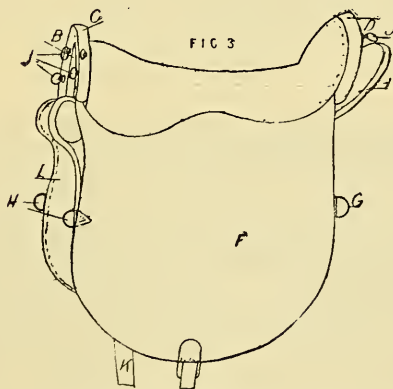
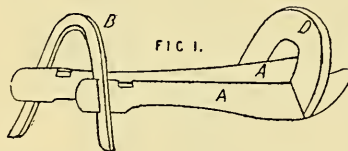


16,736. **Crosbee, S. C. F.** Oct. 2.

Collars, neck, hames for. The weldless rein ring B is attached to the hame by bending the hame nib or projection A around the ring as shown.



17,480. **Fraser, J.** Oct. 13.



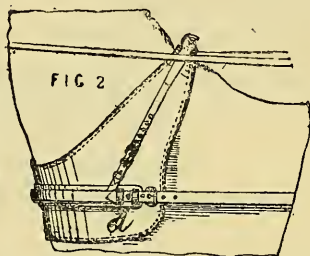
Saddles.—Relates to a combined riding and deer-carrying saddle. Fig. 1 shows the saddle-tree, and

Fig. 3 the complete saddle, which are both made in the special form shown. When the saddle is to be used as a deer-carrying saddle, rings J, Fig. 3, are screwed into the pommel B and cantle D, and a curved piece C is attached by thumb-screws to the pommel B to increase its height. The panels I are attached to the parts of the bars A A, which project beyond the pommel and cantle. Rings G, H fixed to the flaps F serve for the attachment of the breeching and breastplate respectively. A bellyband K is fixed to the flaps, and three girth straps (not shown) are secured to the tree.

17,945. Perrot, C. de. Oct. 20.

Collars, breast.—

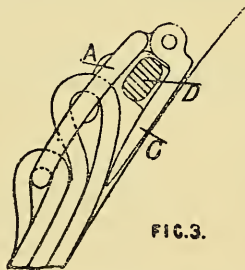
A large plate of leather &c. *d*, of the shape shown, is secured beneath the ordinary collar to prevent friction against the skin.



18,225. Weston, B. S. Oct. 23.

Stirrup straps, suspending; fastening

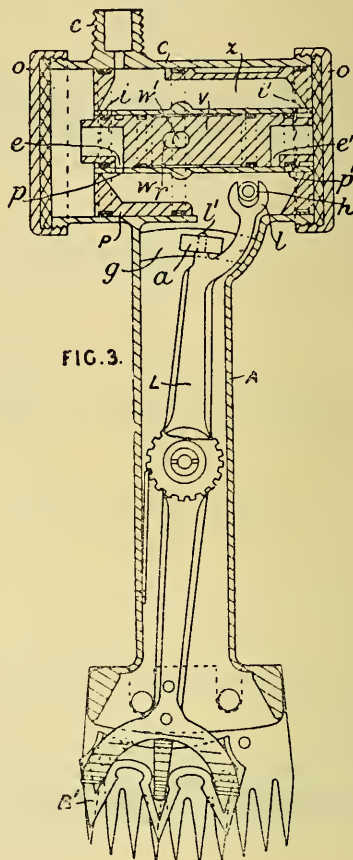
stirrup straps, buckle attachments for. Relates to an improvement on the safety suspender described in Specification No. 5733, A.D. 1884, the object being to prevent chafing of the rider's leg by the buckle of the stirrup strap. The buckle A is combined directly with the safety tongue hook C, and is thus kept close up to the saddle-bar D.



18,350. Fletcher, J., Huggins, F., and Huggins, H. Oct. 24.

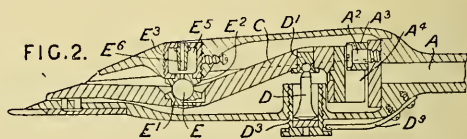
Horse clippers and the like.—Relates to a compressed-air engine and means for adapting it to shears for clipping and shearing animals and cutting human hair. The engine may also be actuated by hot air or steam. The motor cylinder C is formed across one end of the tubular handle A of the shears. One end *l* of the lever L carrying the blade B¹ is forked and embraces a pin *h* on the motor piston; a roller *a* on a projection *l*¹ works on a guide *g*. The air is supplied preferably from a steel bottle through the nozzle *c*; it enters a chamber *z* in the top of the piston P and is admitted to the ends of the cylinder through ports

*i, i*¹ and an axial valve V; the valve is shifted by impinging against cushions on the cylinder covers *o*. The air is exhausted through ports *e, e*¹ in the valve, the ports *p, p*¹ and chamber *w* in the piston,



and the tube A. The stroke of the valve is limited by a pin *w*¹, which passes through a slot *r*. The air by entering the cylinder before the end of the stroke tends to cushion the piston.

18,937. Redfern, G. F., [Wolseley, F. Y.] Nov. 3.

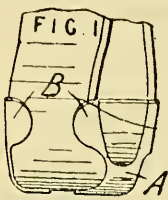


Horse clippers and the like.—Relates to sheep-shearing machines. The lever C actuating the cutters is oscillated by a crank-pin A² on the shaft A. The crank-pin carries a roller A³ working in a groove in the semi-cylindrical piece A⁴ which oscillates in the end of the lever C. The lever is

supported at the rear by a pin D, shaped as shown, the upper and lower ends of which bear respectively in the block D¹ and the hollow adjustable screw D³ which may be fixed in position by a spring D². The middle of the lever C is pivoted to the upper part of the casing by a ball E bearing upon blocks E¹ and E² suitably shaped and channelled for lubricating. The block E² is fitted to the adjusting-screw E³ provided with a nozzle E⁶ and reservoir E⁵ for the lubricant.

19,890. **Brown, J. W.** Nov. 17.

Bridles.—The loops of the check straps and reins at the point where they come into contact with the bit rings are lined with a metal sheath A fixed by clips B.



20,182. **Burman, W., and Burman, W. H.** Nov. 20.

FIG. 3

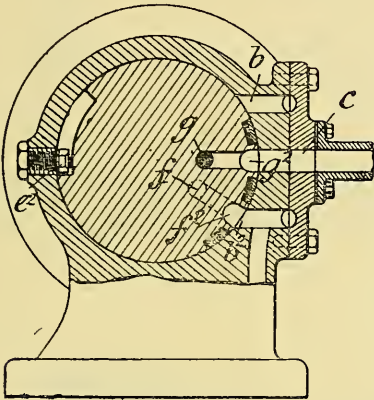


FIG. 1.

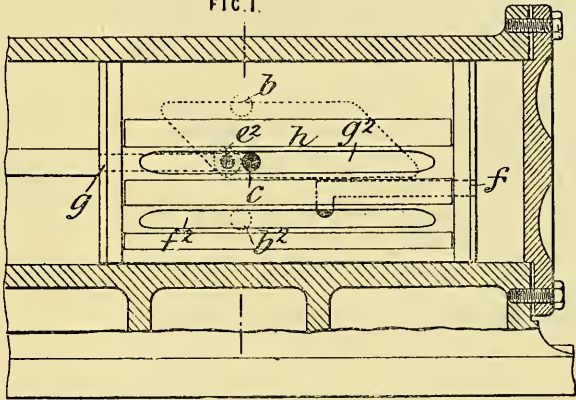
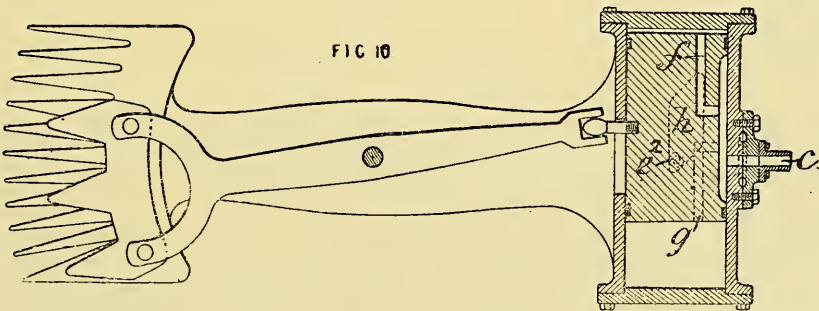


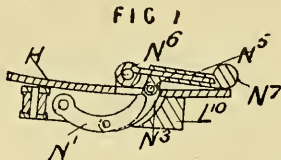
FIG. 10



Horse clippers and the like.—Relates to engines of the reciprocating piston type, and of the class in which the distribution of the motive-fluid is effected by a valve-like action of the main piston. The apparatus may be applied to horse-clipping and sheep-shearing machines, and can be worked by compressed air, steam, heated air, water, or gas. The supply and exhaust pipes c, b, b², Figs. 1 and 3, open into the middle of the cylinder, the ports being arranged transversely with the steam port in the middle; and in the piston are a pair of longitudinal grooves g², f², communicating with passages f, g opening at opposite ends of the piston. The change from steam to exhaust and *vice versa* at each end of the stroke is effected by a partial rotation of the piston caused by a fixed roller stop e² engaging with the ends of a rhomboidal depression h in the piston. The piston is packed by end rings and longitudinal strips backed by some resilient substance. In Fig. 10 the application of the invention to sheep shears is shown; the lettering of the parts is the same as in Figs. 1 and 3.

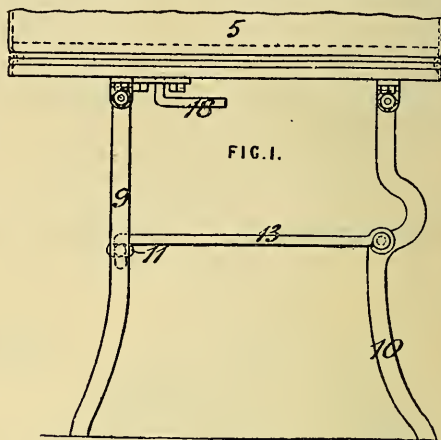
20,507. Tyler, F. B. Nov. 25.

Bridles; stopping and controlling runaway and restive horses.—Relates to bridles with nostril-compressing apparatus to control runaway and unmanageable horses. The noseband is secured at its ends to tubular pieces connected by an adjustable mouth-bar, and containing spring slides which are operated by a chain running through the hollow reins to the driver. Fig. 7 shows a part of a tubular piece H, with one of the slides L¹⁰. To each slide there is pivoted a system of jointed links N¹, N³, N⁵, N⁶, the link N¹ being jointed to the slide L¹⁰, and the link N⁶ to the tube H. On pulling the slide the knob N⁷ is forced against the horse's nostril.

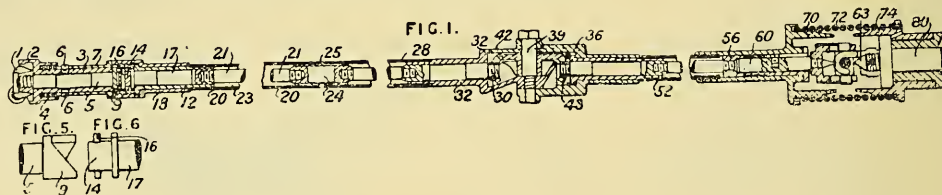
**20,684. McQuat, A. M.** Nov. 27.

Nosebags.—A tripod is fixed to the bottom of the bag 5, to support it from the ground. The

tripod consists of two legs 9 (only one is shown) united by a cross-bar 11, and a third leg 10, to which is hinged the hook 13 taking into the

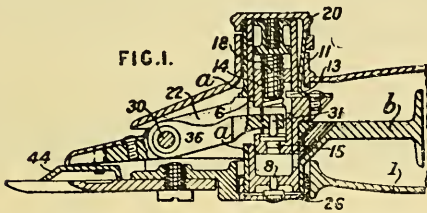


cross-bar 11. All the legs are hinged to the rigid base of the bag to enable them to fold up, the catch 18 keeping them in the folded position.

20,832. Moffat, J., and Virtue, W. W. Nov. 30.

Horse clippers and the like.—Relates to flexible shafting, clutches, and couplings for driving shearing and other portable machines. The invention comprises two arrangements of shafting. In the first, Fig. 1, the shaft is in two rigid sections connected by an elbow joint consisting of two parts 32, 36 screwed or brazed to the ends of the casings 28, 52 and united by a pin 39 on which is mounted a bevel-wheel 42 gearing with pinions 30, 43 screwed on the ends of the shaft sections. The end 5 of the lower section carries a wheel 1 gearing with a wheel on the machine, and rotates in a sleeve 3 the head 2 of which is pivoted to the machine; it is connected to the main portion of the lower section by means of a clutch, Figs. 5 and 6, consisting of a hollow head 9, formed on the end of the section 5, adapted to receive the end 14 of the section 17 which is provided with pins 16 fitting between the claws cut in the head 9. The enlarged end 17 of the shaft rotates in a sleeve 12 secured to the end of the casing 20, and enclosed in a sleeve 18 into which is screwed another sleeve 7 enclosing the sleeve 3 and connected to it by pins 6 and bayonet slots, the springs 4 serving to lock it in place. The casings 20 and 28 are united by a bush 25 which forms a bearing for the piece 24 connecting the lengths 21, 23 of the lower section of the shaft. The overhead or driving spindle 80 is connected by a universal joint to the part 60 which slides into the enlarged end 56 of the upper section of the shaft, and drives it by means of a pin and slot. A collar on the spindle 80 supports a sleeve 74 surrounded by a spiral spring 72 into which is screwed a sleeve 70 fixed to the upper end of the casing 52. The universal joint is formed with hooks instead of the ordinary eyes, and the ends of the spindles are prolonged as shown at 63 to prevent disconnection. Oil is supplied to the sleeve 70, for the purpose of lubricating the bearings, by means of a siphon pipe. The sections of the casing form oil chambers provided with charging-holes. In the second arrangement the shaft is formed in three or more sections united by universal joints, such as that shown in Fig. 1, but other constructions are also described in the Specification.

- 20,833. Moffat, J., and Virtue, W. W.
Nov. 30.



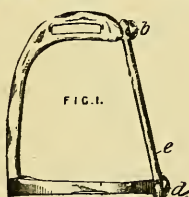
Horse clippers and the like.—Fig. 1 shows one of the many forms of tool. The knives 44 are reciprocated by a tension fork 36 which is pivoted on a pin 30 between wings 22 on a piece which comprises a tubular part *a* and an arm *b*, the latter being formed in the usual way for the inclined crank-pin driving it. The part *a* is closed by a cap 26 carrying a bearing block for the pivot 8 of the motion tube 6, which is bolted firmly to the casing 1 and lies within the tubular part *a*. Within the motion tube 6 is a tension slide piece 14 which is moved by the screw 18 but kept from turning by the pin 13. The slide piece is slotted to receive the end of the tension fork 36, which carries a pin 31 bearing upon a block 15 as shown. The cap 20 which actuates the screw 18 always bears upon the top of the tube 6, and is notched for the spring catch 11. In a modification, ball bearings are arranged between the tube 6 and tubular part *a*; the pin 31 bears upon a spring-supported plate, and a similar pin upon the piece 14 or the end of the screw 18 bears on the top of the lever 36. In another modification, the tension slide piece 14 and motion tube 6 are replaced by a single sliding piece and the cap 26 bears on a pin fixed to the casing. The pin 30 may be bulged in the middle, or be made cylindrical and the hole contracted in the middle to allow the fork 36 to press evenly on the cutters. The lever 36 may be in two parts connected together by a spring hinge, screw, &c. In other modifications the tension screw 18 is situated in front or at the rear of the axis of the lever *b*; the motion tube in the latter case may be replaced by a solid bar.

- 21,006. Powell, A., and Lynch, H. Dec. 2.
Drawings to Specification.

Spur-carriers for boots and shoes. A spur is carried by a plate fitting in the rear groove of a heel tip.

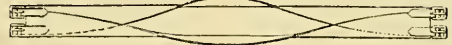
- 21,458. Peacock, E. A. Dec. 8. *Amended.*

Stirrups.—One side *e* consists of a rubber band secured by knobs *b*, *d* which allow the band to become free if the rider is dragged.



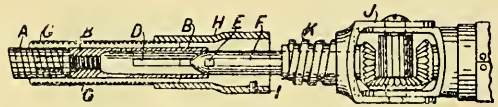
- 21,462. Richards, S. E., Richards, J. V., and Richards, J. W. Dec. 8.

FIG. 3



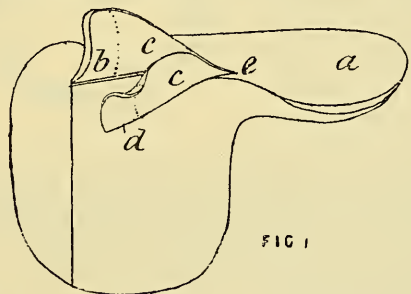
Saddles, girths for. The girth is made in three folds, which give a smooth edge, and prevent the oil &c., with which the leather may be dressed, when opened out as shown, from coming into contact with the rider's clothes.

- 21,584. Ashberry, P., and Barnes, W. Dec. 10.



Horse clippers and the like.—Relates to means for coupling a clipper for wool or hair to the end of a flexible driving-shaft. To the flexible shaft A is screwed the tubular piece B, which receives the shaft F of the clipper. Pins E on the shaft F enter slots D in the piece B. To the shaft casing G is fixed a socket H, having a pin I which engages with the threaded part K of the joint-piece J. By means of this coupling the clipper can be readily connected with, or disconnected from, the flexible shaft A whether it is rotating or not.

- 21,796. Smith, T. G., and Mayhew, F. W. Dec. 12.



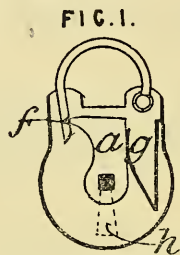
Saddles.—In ladies' riding saddles the pommels or crutches *b*, *d* have fitted to them, or are extended to form, triangular webs *c* which connect them to the seat *a* and either nearly or quite meet at the point *e*. Only one pommel may be so extended if desired. By this means a greater grip is obtained. On the faces of the pommels which receive the pressure, inflated air pads may be fitted.

21,852. Ramster, T. Dec. 14.

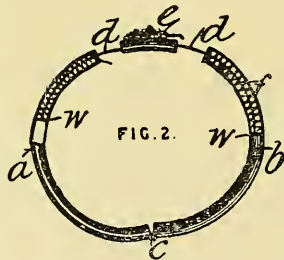
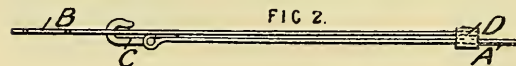
Saddles, riding. The gullet *d* and points *a, a* of the saddle-tree are strengthened by a metal plate *e* in one piece, shaped as shown, and riveted in position. For additional strength there may be a longitudinal groove in the middle or gullet part of the plate.

**21,889. Lancelott, G. E.** Dec. 15.

Dog collars; fastening curb chains &c. Relates to fastenings for dog collars, curb chains, &c. The fastening is shaped like a padlock, as shown. The pivoted catch *a* engages, under the influence of the spring, with a notch in the shackle &c. *f*. The fastening is released by turning the piece *h*, which resembles in form and position the keyhole cover of an ordinary lock.

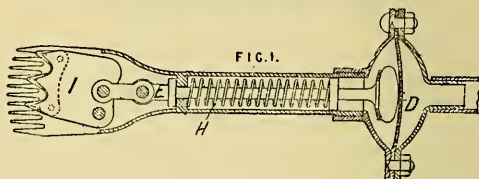
**22,032. Mürrle, A.** Dec. 16.

Dog collars.—Relates to a fastening-device for bracelets, applicable also for dog collars &c. Fig. 2 shows a partial section of a bracelet, in which the two tubular or drilled parts *a, b* are hinged at *c*. Flexible wires *d* connect the two parts to the independent piece *e*, which may be omitted and the wires *d* connected directly to the two parts. The wires *d* terminate in washers *w* against which the ends of the spiral springs *f* bear. The bracelet &c. may be made with two or three rings in parallel, or may be made without a hinge, the two parts being connected by flexible wires.

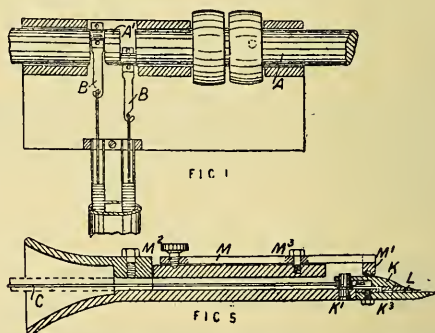
**22,306. Richards, H. P.** Dec. 21.

Saddles, girths for. The girth is formed in two parts *A, B*, on one of which is a loop *D* through

which the end *A* carrying a hook *C* is passed, the hook being caused to engage with one or other of a number of holes in the part *B* according to the length of girth required. The ends of the girth are secured by a buckle in the usual manner.

22,324. Scarfe, G., Smith, R., Scarfe, T. R., [trading as Geo. P. Harris Scarfe & Co.], and **Nicholas, A. M.** Dec. 21.

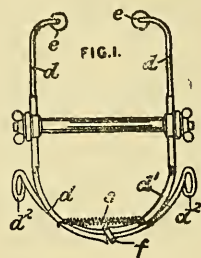
Horse clippers and the like.—Relates to sheep-shearing apparatus. The cutters *I* are worked by a vibrating diaphragm *D* acting on a rod *E*, which is returned by a spring *H*. In a modification, there may be two lateral diaphragms which act alternately upon a pivoted lever carrying the cutters. The diaphragm is operated by a column of water or other fluid transmitted by a flexible tube, or by a double tube in the case of the two-diaphragm modification. The water in the single (or double) tube is set in motion by a plunger or by a pin acting on a diaphragm at the other end of the tube, the plunger or pin being actuated by a coarse-toothed wheel.

22,774. Nash, J. G. Dec. 30.

Horse clippers and the like.—Relates to sheep-shearing machines. Fig. 5 shows a longitudinal section of the shears or clippers. The cutter bar or carrier *K* pivoted at *K1* and provided with lugs *K3* to attach it to the cutter *L* is actuated by two wires or cords &c. *C* attached one on either side of the pivot *K1*, or by one wire and a spring. The tension of the cutter is adjusted by the lever *M* pivoted at its centre *M3*, and provided with a thumb-screw &c. at *M2* at one end and a bearing block *M1* carrying ball bearings at the other. Fig. 1 shows a method of oscillating the wires *C*. It comprises a main shaft *A* with a double crank *A1* and connecting-rods *B, B*.

22,851. Sandbach, H. M. Dec. 31.

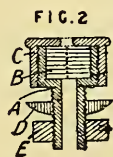
Stopping and controlling runaway and restive horses; bits.—Runaway and other horses are controlled by closing their nostrils by means of pads *e* on the ends of levers *d* adjustably pivoted to the cheeks of the bit and terminating in curved arms *d*¹, which are united by a ring *f* and drawn together by a spring *s*. The reins are attached to loops *d*² on the levers. If no mouth-bar is used the levers are attached to the noseband, and are connected by a bar passing behind the jaw of the animal.



A.D. 1892.

70. Robertson, J. B., and Robertson, T. W. Jan. 2.

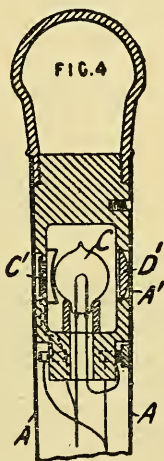
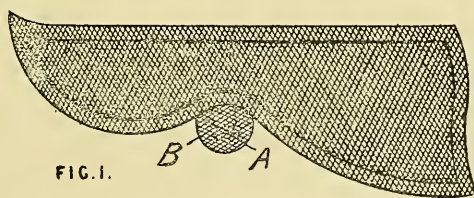
Saddles, pneumatic, valves for. The valve has a screw-threaded frame *A* recessed to hold a piece of india-rubber *B* with a fine hole through it for the reception of the point of the inflator; a screw-threaded cap *C* closes the air passage by compressing the rubber. *D* and *E* are nuts for fastening purposes.



When the lamp is in the walking-stick &c. handle, the latter is preferably translucent or transparent, and it may be fitted with a cap. Fig. 4 shows a walking-stick fitted with an incandescent electric lamp *C*, a lens *D*¹, and an electric cigar lighter *C*¹. The lens and cigar lighter are normally concealed by a tube *A* attached to the handle, and provided with an aperture *A*¹ which can be brought opposite to the lamp or the cigar lighter, and when this happens the battery circuit is completed through the lamp or lighter by means of an electric switch.

97. Levi, S. H. Jan. 2.

Whips.—An incandescent electric lamp, together with primary or secondary galvanic batteries, and with or without an electric cigar lighter, is fitted or combined with a walking-stick, whip, &c. The batteries are located in the tubular part of the stick, and the lamp is preferably located in or near the handle. A number of small dry batteries placed one above another are preferred.

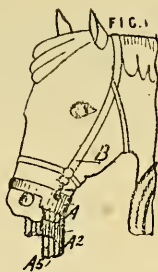
**99. Smith, T. C.** Jan. 2.

Saddles.—Riding and harness saddles are fitted with panels consisting of inflated bags. These may be made of india-rubber and may be attached by cement, by sewing into cases, or by clips &c. Fig. 1 shows a panel for a riding saddle; a stop-cock *A* protected by flaps *B* is provided for inflating it.

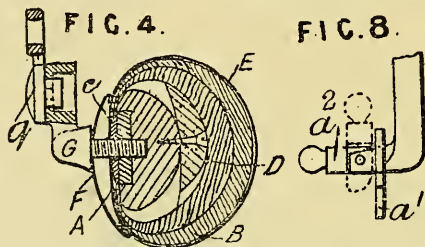
428. Lake, H. H., [Gillespie, N., and Gillespie, C.]. Jan. 8.

Muzzles for animals.—

The object is to prevent a horse from removing or injuring his blanket while allowing him to eat. From a band A attached to the headstall B hang a series of interlocking links or chains A² connected at the bottom. The guard thus formed may extend only partly (as shown) or wholly round the mouth, and in the latter case the end may be closed by crossed chains or wires which may be stretched across a detachable ring.



806. Carlier, G., and Carlier, L. Jan. 14.

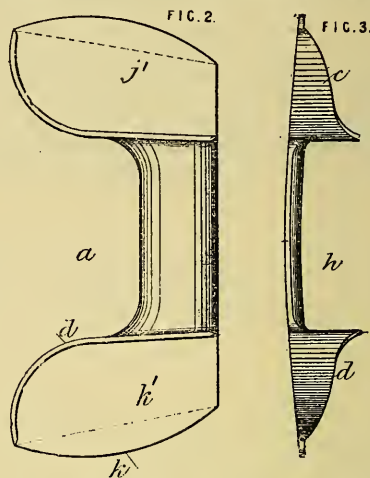


Collars, neck; fastening collars, couplings for. Fig. 4 shows a transverse section of the collar at the trace fastening, and Fig. 8 the fastening connecting the two sides of the collar at the bottom. The hinged collar consists of two metal plates A hinged together at the top, and provided with several holes into which are screwed in the required positions the terret rings and the studs G into which the trace loops *q* are hooked. The pivot of the hinge forms a screw socket for a rein guide at the top of the collar. To the metal plates A are screwed suitably-shaped lengths of wood to which cork is secured. A strip of leather *c* is placed over the metal plates as shown, and the whole is covered in felt D, and lastly with varnished leather or india-rubber E which is secured by lacing. The felt and leather &c. terminate in small pockets which are passed over the ends of the wooden parts. Metal plates F hinged together at the top of the collar serve to protect the lacing. The fastening, Fig. 8, consists of a hinged stud *a*² fixed to one half of the collar and taking into a slotted plate *a*¹ fixed to the other half of the collar.

920. Adderley, S. Jan. 16.

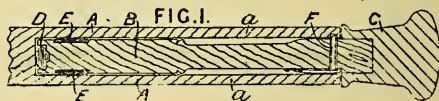
Saddles, cab &c. Relates to a saddle plate for the backband. Figs. 2 and 3 show respectively a plan and edge view of the plate, which is cut back at *a*, and formed with curved flanges *c*, *d* as shown,

between which at *h*, Fig. 3, the backband passes. The ends may be curved as at *k*, or straight as at



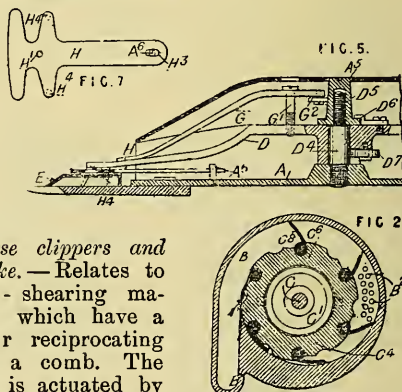
*j*¹, *k*¹. The plate is fixed to the saddle by brass-headed screws and nuts.

973. Wetter, J., [Flim, J. J.]. Jan. 18.



Whips.—A whip handle is fitted with a tinder appliance for lighting cigars &c. A plunger B, fixed to the handle C, is provided with packing E, and is fitted in a tube or cylinder *a* enclosed in the stick A. A piece of tinder D is fixed in the end of the plunger, and when the latter is suddenly pushed into the stick the tinder is ignited owing to the heating of the air in the cylinder. A spring catch F is fitted in the plunger to hold it in the position shown.

1079. Melchior, A. Jan. 19.



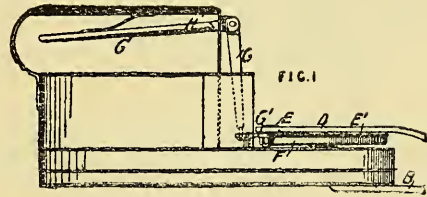
Horse clippers and the like.—Relates to sheep-shearing machines which have a cutter reciprocating above a comb. The cutter is actuated by cranks on a shaft driven by a rotary motor. The cutter E is actuated

by a lever H, Figs. 5 and 7, to which it is connected by pins H⁴. This lever is slotted at H³ for the pin A⁵, and is actuated by the lever D carrying a pin fitting into the hole H¹. By this means a "drawing cut" is given to the blades E. The lever H may be dispensed with, if desired. The lever D is pivoted at its centre on the pin D⁴ screwing into the casing A and a cap D⁵. A roller D⁷ on the lever bears against the pin. The tension of the lever on the cutters is adjusted by a spring G fixed by a screw G¹ to the lever D and formed with a roller G² bearing on the cap D⁵. The cap is held

loosely to the lever by an arm D⁶, so that, by unscrewing the cap through the opening A⁵, the lever and tension spring are raised together and after the cutter E has been sharpened may be replaced with the tension unaltered. The crank shaft C, Fig. 2, in a line with the lever D, Fig. 5, carries a disc C¹ with a curved rim from which project pins engaging slots in the ring C⁵ to which are hinged the vanes C³. These parts are arranged eccentrically in the box B, so that the vanes are closed automatically as shown. The working fluid enters the box at B¹ and escapes at B².

1201. Harrington, C. Jan. 21.

Horse clippers and the like.—The lower cutter is carried by the bar B, and the upper cutter is worked by the pivoted lever D which is actuated by a crank-pin E moving in a slot in the lever. The crank-pin is fixed to a wheel E¹ connected by a train of gearing to two spring drums. The motion is regulated by fliers connected by a train of wheels with the driving-gear. The wheel E¹ is grooved for a band brake F operated by the bell-crank lever G and the lever G¹. The horizontal arm of the bell-crank lever is situated in the looped handle H so that, on grasping the handle, the brake is released and the machine begins to work. The Provisional Specification states that the cutter lever D may be worked by a cam.



1766. Wilton, H. S. Jan. 29.

Saddles, ladies'. The object is to enable a lady to adjust the girth without dismounting. The lower end of the flap A is held down to the girth F by a hook E and eye G, or any other readily-releasable fastening. The hook is carried by a strap attached to the flap at B, and having a rubber &c. spring at C. By this means the lady can readily undo and raise the flap so as to reach and adjust the girth buckles beneath.

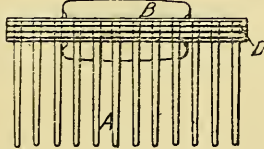
FIG. 3.



1968. Binns, G. A. Feb. 2.

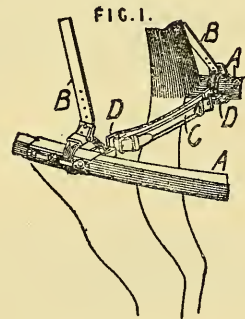
Combs for dogs, horses, &c. The metal teeth A, in one or more rows, pass through the wooden frame or handle B and the metal strip D, which is recessed therein to prevent warping.

FIG. 2.



1998. Brown, J. E. Feb. 2.

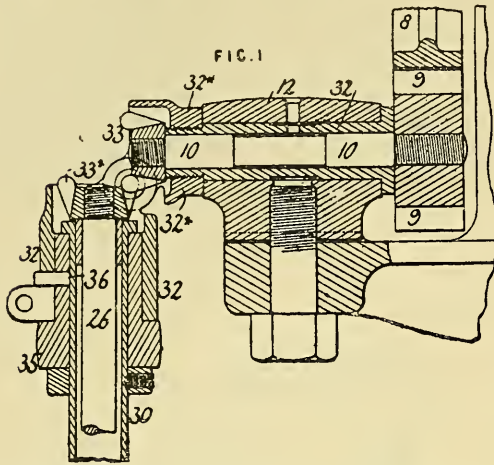
Breeching.—A broad strap C is stretched across the shafts A, A behind the horse's hind quarters, to serve as a breeching-strap, and to prevent kicking. The strap may be fixed directly to the shafts, or to the kicking strap B by D-fastenings D as shown.



2021. Newall, J. W. Feb. 2.

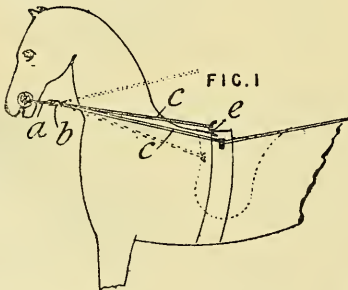
Horse clippers and the like.—Relates to flexible shafts consisting of a series of rigid sections connected by bevel-wheels, as described in Specification No. 13,332, A.D. 1891, and applicable for driving clipping or shearing and other machines. The driving-shaft carries a spur-wheel 8 gearing with a pinion 9 on a short shaft 10 which is connected to the upper section 26 of the flexible shaft by rose-wheels 33, 33^o and runs in a sleeve 32^o capable of rotation in the bearing 12. This is jointed to a sleeve 32 capable of rotation about the sheath 30, and formed with the eye large enough to allow the rose-wheel 33^o to be drawn through it for disconnecting. On the end of the sheath and free to rotate is secured a sleeve 35 carrying a pin 36 which engage in a bayonet slot

in the sleeve 32; the latter is also clamped on the former in any suitable way. This arrangement may be adapted for connecting the different



sections of the sheath and for connecting the last section to the tool. Bushes of lead or fibre &c. are interposed between the bearing bushes of the shaft and the sheath, to absorb vibration.

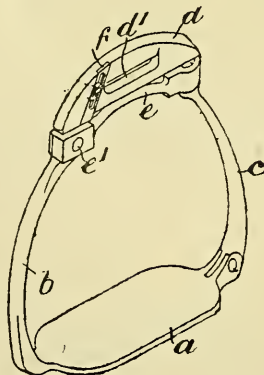
2069. Easton, H. Feb. 3.



Bridles.—The reins *c*, either for riding or driving, instead of being fixed directly to the bit are passed over rollers *b* on short straps *a* and carried back to hooks *e* on the saddle &c.

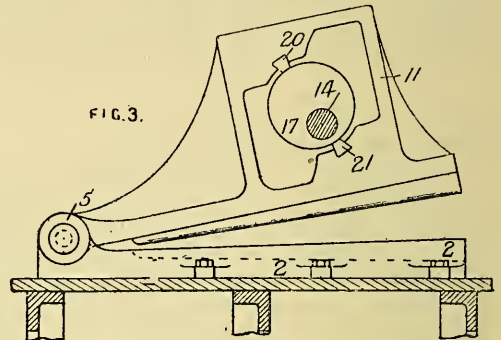
2282. Bond, E., and Good-fellow, J. Feb. 5.

Stirrups, safety.
The stirrup consists essentially of three pieces, namely, the tread *a* and side *b*, formed with an eye at its upper end; the top part *d* with the eye *d'* for the stirrup strap and the side *c* hinged



to the tread; and, lastly, the cross-bar *e* hinged to the top of the side *c* and provided with a pin *e'* to connect the side *b* and top part *d*. An adjustable spring *f* prevents the cross-bar *e* from turning too readily. The stirrup is opened out to release the rider's foot by the pressure of his foot against the cross-bar *e*.

2297. Mills, T. W. Feb. 6.



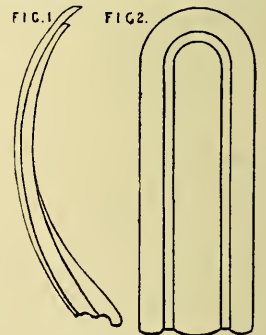
Collars, neck.—Relates to a machine for making hame caps or coverings. The caps are made from strips of sheet metal pressed between two or more pairs of tools which form the strip to the required shape, thus: (—), in two or more stages. Fig. 3 shows the pair of tools for the first operation, namely, that of grooving the strip. The grooved lower tool 2 is bolted to the frame, and the upper tool which fits into it is hinged at 5 and reciprocated by a cam 17 acting against the removable wearing-surfaces 20, 21, as shown. The side 11 of the frame of the upper tool may be removable. The cam shaft 14 is driven from the main shaft by spur gearing.

2315. Upton, W. S., Upton, E. R., and Upton, A. C. Feb. 6.

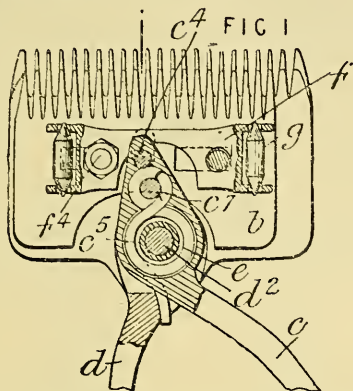
Whips.—The core is made of steel wire instead of whalebone.

2478. Jones, E., and Boote, H. Feb. 9.

Saddles.—The heads or pommels of ladies' saddles are made on a suitably-shaped foundation piece of metal or other material, which may be padded with felt &c., and may screw into the saddle-tree or be attached by screws to an upright already on the saddle. Figs. 1 and 2 show two views of the foundation piece above mentioned.

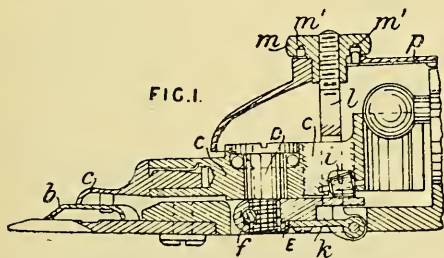


2701. Ewins, W. J. Feb. 11.



Horse clippers and the like.—Clippers for wool and hair of the type usually employed by hair-dressers are fitted with a helical or U-shaped spring for returning the handles to the open position when the grip is relaxed. The comb is fixed to one handle *d* which carries the pivot *d²* for the handle *c*. The handle *c* has a recess for the spring *e*, a sleeve *c⁵* for receiving the pin *d²*, and a pin *c⁷* for one end of the spring *e* to bear against. It has a second pin *c⁴* which takes into the cutter *b* and oscillates it beneath the pressure plate *f* held rigidly in place by nuts *f⁴* and bolts fixed to the comb. The plate *f* is shaped to receive special rollers *g* for bearing on the reciprocating cutter *b*. The plate *f* may be formed on the fixed lever *d*, and the pin *c⁵* may be dispensed with if the recess is suitably shaped. A differently-shaped recess is used for the U-shaped spring. The Provisional Specification states that pivoted spheres may be used as rollers, and that the rollers may be placed between comb and cutter plates.

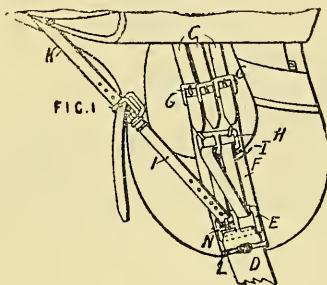
2805. Burgon, C., and Burgon, H. Feb. 12.



Horse clippers and the like.—Relates to shearing or clipping machines such as are described in Specification No. 5317, A.D. 1891. The pin *D* upon which the lever *C* vibrates is fixed to a piece *E* pivoted to the casing at *f* and connected by a plate *k* and forked lever *l* to the adjusting-nut *m*, which is locked in position by a spring *p* carrying

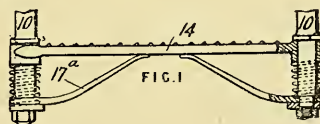
a pin to engage with holes *m¹* in the nut. The lever *C* carries a conical roller *i* which bears upon the tail of the plate *E*. The removable crosshead *c* for holding the cutter *b* is made with a shank to fit into a socket in the lever *C*, a bent spring holding the parts together while allowing the crosshead to be readily removed and to adapt itself to the cutters.

3495. Lane, R. A. Nov. 12, A.D. 1891, [date claimed under Sec. 103 of Patents &c. Act, A.D. 1883].



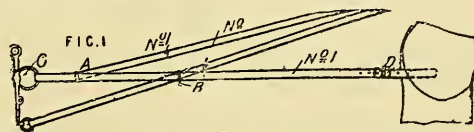
Saddles; fastening saddle girths, buckle attachments &c. for. One end of the saddle girth *D* carries a buckle *N, E*, one bar of which is inclined as shown. A strap *I* connects this buckle with a loop *H* fixed to the strap *F* which is provided with buckles *G* for the fixing-straps *C*, and a strap *L* for keeping the strap *F* and girth *D* together. The inclined end of the strap *I* is buckled to the strap *K* within easy reach of the rider. Cords and rings may be used instead of the strap *I* and loops *H, E*.

3625. Myall, A., [Lotbiniere, A. J. de]. Feb. 24



Stirrups.—The tread *14* is made to slide upon the legs *10* against the action of a spring or springs, which may be helical, as shown in dotted lines, or of the plate type, either in one piece or in two, as shown by *17ᵃ*.

3687. King, F. Feb. 25.

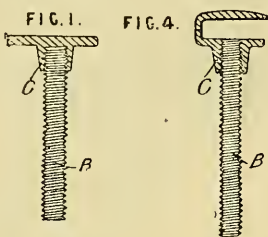


Bridles.—The ends of the upper pair of reins No. 1 are passed through the bit rings *C*, rings *A*,

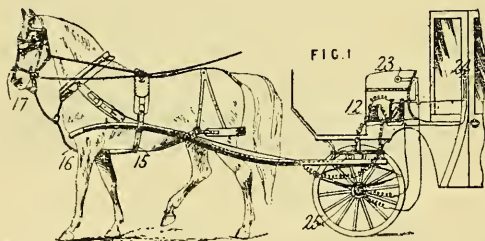
attached to these reins, and free rings B connecting them to the lower pair of reins, and are then buckled to short straps D on the riding saddle.

3742. Wincer, T. Feb. 26.

Saddles.—Relates to beads or guides for the edges of the skirts of harness saddles. Figs. 1 and 4 show sections of the beads at the fixing-screws. The single bead, Fig. 1, or the double bead, Fig. 4, is formed beneath with a projection C into which the fixing-screw B is screwed. The screws may be attached to the beads by casting, or the end of the screw may be notched and the metal of a plain socket closed around it.



4015. Lake, H. H., [*Holson Electric Harness and Supply Co.*]. March 1.

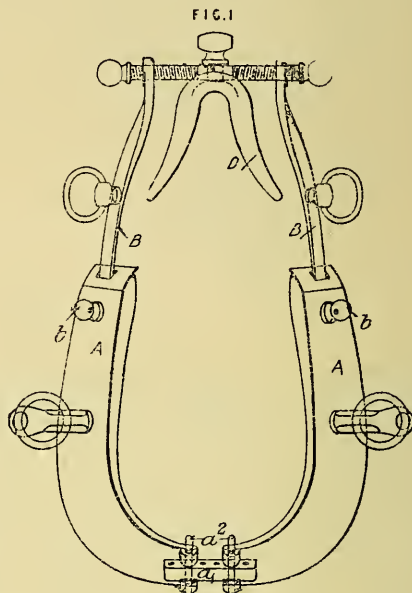


Electric harness.—Horses, whether ridden or driven, are started by passing an electric current between terminals resting on the back or other suitable place, preferably beneath the saddle, and are stopped by passing the current between terminals in the nostrils. Fig. 1 shows suitable connections for stopping a harness horse. The terminals in the nose pass through the noseband 17, the martingale 16, the girth 15, and the shafts to the induction coil 12, connected to the battery by suitable circuits having contact-pieces 23, 24, and 25, the first two being for the use of the driver and the occupant of the vehicle respectively, and the last, 25, being an automatic contact-piece which closes the circuit after the wheel has revolved a certain distance.

4249. Boulton, A. J., [*Ahl, C. A. R., and Forbrich, O.*]. March 3.

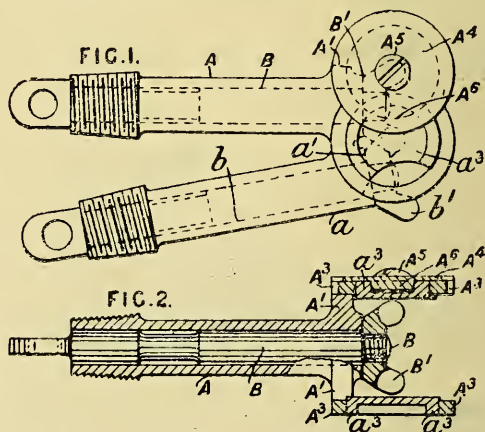
Collars, neck.—The collar is supported at the top on the neck of the animal by a saddle-shaped piece D to which a transverse screw is pivoted.

The parts B are connected by the screw, so that the width of the collar may be varied at the top. The width may also be varied at the bottom by a bar *a* provided with a series of holes into which



the hinge pins *a*² may be inserted. The length of the collar may be varied by adjusting the parts B in the parts A by the set-screws *b*. The swivelling saddle-shaped piece D may be used with any form of horse collar.

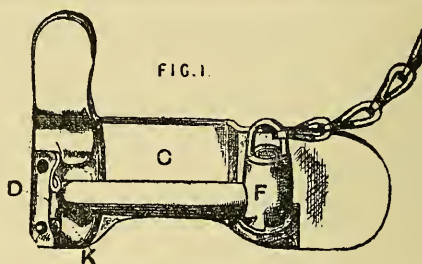
4312. Wolseley Sheep-Shearing Machine Co., [*Wolseley, F. Y.*]. March 4



Horse clippers and the like.—Relates to means for coupling shafts movable angularly, such as the flexible shafts of sheep-shearing machines. The rose-wheels B¹, *b* are mounted on spindles B, *b*

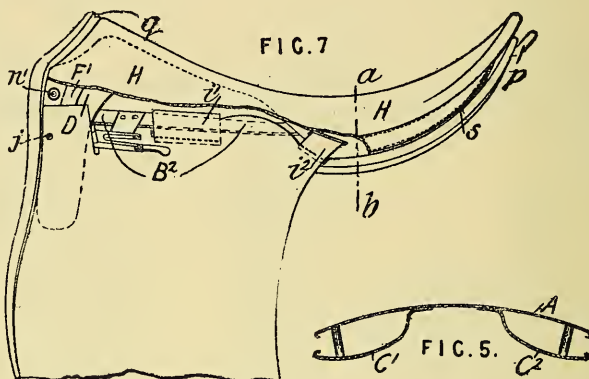
4635. Duly, W. H. March 9.

Stirrup straps, suspending, safety saddle-bars for. The bar F on which the stirrup leather is hung is pivoted on a pin fixed to the back plate C. A spring D keeps the end of the bar in the socket K until an unusual strain occurs, when the bar is liberated and is free to turn on its pivot or to be lifted off it. A chain prevents the bar from being lost.



4725. Trees, J., and Brace & Co., H. March 10.

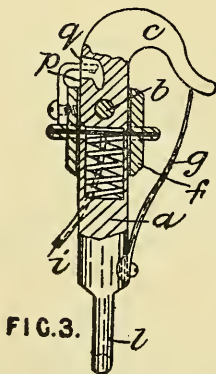
Saddles.—The saddle-tree is made entirely of steel or other metal. Fig. 7 shows an elevation of the saddle with the skirts of the seat removed, and Fig. 5 shows a section of the tree on the line *a-b*, Fig. 7. The tree consists of a metal seat plate A, Fig. 5, beneath which are riveted bearing plates C¹, C². The plate A is riveted in front to the top of the front plate D, Fig. 7, and also connected to it by the side plates B² carrying the saddle-bars. The front plate D is formed with a groove for a strengthening-bar F¹ running nearly the whole length of it. A shorter strengthening-bar running parallel to the first is also riveted to the front plate D.



The seat plate A is covered with felt &c., and then with blocked leather H sewn on. The flaps are riveted at *j* to the front plate D, and are provided with flaps *i*¹, *i*² which are sewn to the side bars B² and to loops respectively. The panel is fixed in front by screws which pass through holes *n*¹, by sewing or lacing at *q*, by lacing at *s*, and by a loop connected to the crupper hook *p*.

5060. Arcularius, A., and Hunger, O. March 15.

Dog leashes.—Relates to leashes for slipping dogs. The holding-cord is formed with loops, at intervals, into any one of which a terminal button may be inserted so that the cord may be securely held. Fig. 3 shows a section of the slip-hook. The hook proper *c* is pivoted at *b* to the barrel *a*, which has a spring *g* to close the mouth of the hook and a ring *l* for the holding cord. A sleeve *f*, actuated by a spiral spring, slides upon the barrel.

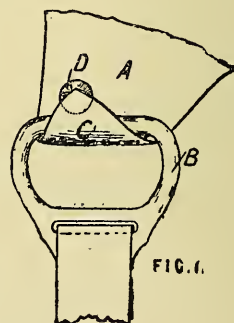


The sleeve is attached to the releasing-cord *i*, and carries a finger *p* which enters a peculiarly-shaped recess *q* in the hook proper *c*. The hook may be attached to the dog's collar by using it like an

ordinary snap-hook. On pulling the cord *i* the sleeve *f* is drawn back, thus allowing the hook to fall open, the finger *p* at the same time giving the hook an initial tilt. On releasing the cord *i*, the hook returns to its original position.

3250. Cooper. W. March 17.

Stirrup straps, suspending, safety saddle-bars for. The stirrup strap is attached to a loop B, which is held normally in the hook C of the plate A by a conical stud D attached to a spring at the back of the plate A.

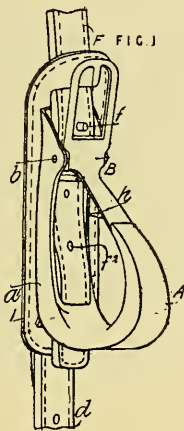


5284. Buckingham, J. March 17. *Drawings to Specification.*

Bridles.—The hand parts of reins are made in such a way as to prevent them from slipping through the hands in cold or wet weather. For this purpose tubes of rubber &c., roughened or otherwise, are drawn over the reins and secured by lacing, cementing, &c., or strips of the same material are let into the sides of the reins or bound along their edges.

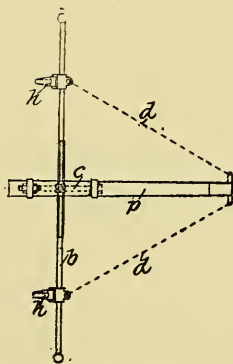
6055. Haas, S. H. March 29.

Tugs, shaft ; fastening back and belly bands. The tug consists of a hook A with channelled back *a*¹, to which the spring tongue B is pivoted at *b*. This tongue is formed at the back with a projection *h* which confines the shaft to the lower part of the tug. The backband F is fixed to the tug by a pin *f* taking into one of the holes *f*², and after passing along the channelled back projects beneath the tug, as shown. The bellyband *d* is secured to a transverse pin behind the tug. A leather plate or strap I, through slots in the ends of which the backband and bellyband pass, may be used to bear against the side of the animal.



6233. Large, P. T. S. March 31.

Yokes, neck ; fastening hames. Relates to pole yokes and fittings for two-wheeled vehicles. Besides the splinter bars attached to the body of the vehicle, a steel bar or yoke *b* is attached to the pole *p* at a slight distance from its free end. The yoke *b* is fixed to a block which slides on a bolt *c* fixed beneath the pole. Upon the yoke are sliding pieces *h*, *h* provided with a hook for engaging with



the kidney link of the hames and with an eye for a chain *d* passing to the end of the pole.

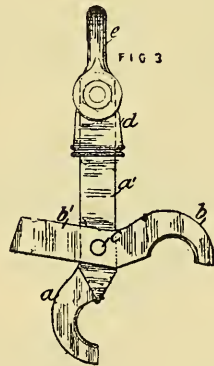
6721. Godfrey, M. F. April 7.

Fastening.—Consists of a button and loop fastening for harness &c. The button consists of two discs *a*, *b* separated by a cylindrical shank *c*. The disc *b* is secured to the article by sewing or by means of a supplementary disc *e*. The disc *a* may have a turned-over edge or recessed back. The loop may be flexible, or may consist of a five-sided frame, either to secure with a spring action or having springs attached inside the frame to embrace the shank *c*.

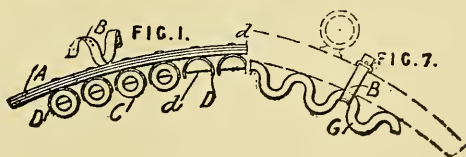


6894. Hartt, C. B., and Watson, S. May 2.

Fastening pole-chains &c., hooks for. Slip-hooks for harness pole-chains &c. consist of two jaws *a*, *b*, shaped as shown, and pivoted together at *c*. The jaws are held in the closed position by a ring or sleeve *d*, which slides on the shanks *a*¹, *b*¹. The shanks together form a bar of the same section as the jaws or the upper part of the shank *a*¹ carrying the shackle *e*.



6973. Schroeder, C. April 12.

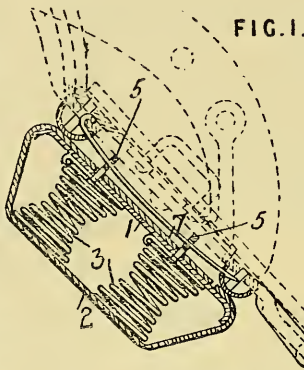


Saddles ; pads.—Pads for harness saddles and other parts of harness consist of a backing A of leather, to which rubber &c. is attached in such a way that there are many points of contact with the

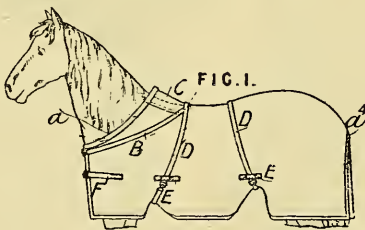
animal with intervening spaces for ventilation. In the form shown in Fig. 1, the rubber is in the form of tubes C which are held in place by metal troughs D with turned-down ends *d*, these troughs being riveted to the backing. In the form shown in Fig. 7, the rubber G has a sinuous form, as shown. The pads are attached to the harness by straps B.

7006. Taite, J. C., and Carlton, T. W.,
[Westlake, A. P.]. April 12.

Saddles.—The panels consist of a backing 1 of metal &c. and an outer covering 2 of leather or other flexible material, between which parts there are springs 3. The panels are detachably secured to the tree by pins 7 passing through eye-bolts 5, 5, as shown. The whole panel is preferably formed in sections, any one of which may be removed if the back of the horse beneath it has become sore. Separate springs may be removed for the same purpose. The outer or inner side of the covering 2 may be covered with felt, thus rendering a numnah unnecessary.

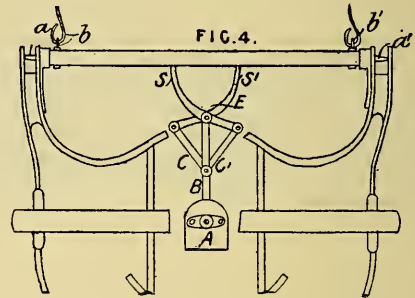


7030. Dailey, J. H., Williams, C. J.,
and Rohr, L. H. April 12.



Clothing for animals.—The blanket has the form shown, and is thickened round the neck *a* by stitching it round a separate piece or otherwise, and at the part C where the blanket is kept from contact with the lower part of the neck. Bands B, F, D, D in the position shown and provided with fastenings keep the blanket in position. The bands D, D are held down by loops E, E which may be in a piece with the band F. A gap *a'* is cut for the lower part of the tail.

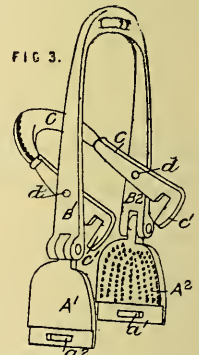
7038. Schmit, J. April 12.



Runaway horses, releasing; fastening traces. Fig. 4 shows in part plan a single-horse vehicle with the invention applied thereto. The splinter-bar or swing-bar is hollow, and encloses spring bolts which project from the ends at *a, a'* and serve to attach the shafts to the vehicle. The traces are attached to fasteners *b, b'* which are fitted into slots in the swing-bar and are held therein by projections on the bolts *a, a'*. When the horses are to be detached, the shafts and traces are released by drawing the spring bolts together inside the tubular bar. This is effected by means of levers *S, S'* working in slots in the bar and attached to the bolts. The levers are pivoted on a fixed centre *E*, and are connected to links *C, C'* jointed to a rod *B* which can be actuated by a cam in a case *A*, the cam being rotated by a suitable key within reach of the driver. Similar apparatus may be adapted for two and four horse vehicles.

7130. Gloster, T., and Banks, R.
April 13.

Stirrups, safety. Fig. 3 shows the stirrup in the open position. The tread consists of two parts *A¹, A²* hinged to the bow *B¹, B²* and overlapping one another when in position. There is also a tongue *a'* on one part which fits into a groove *a'* on the other part. The tread is held in its closed position by an inner bow *C* hinged to the outer bow at *d, d* and provided at its ends with hooks *c'* to engage with the tread.

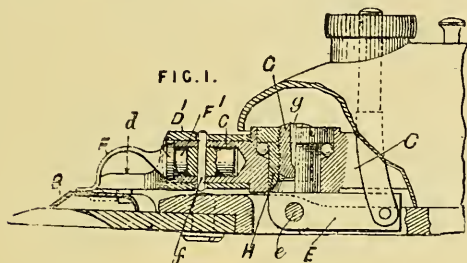


The hook engaging with the part *A¹* may be omitted. The pressure of the rider's foot upon the inner bow causes it to turn into the position shown.

7244. Burgon, C., and Burgon, H.
April 14.

Horse clippers and the like.—Relates to sheep &c. clippers such as are described in Specification No. 2805, A.D. 1892, and more especially to the

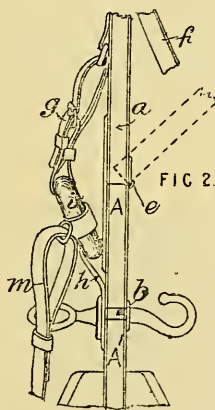
mounting of the parts which bear upon the upper cutter and to the pivot for the actuating-lever. Fig. 1 shows an elevation, partly in section, of the clipper. The lever C is hollowed in front to contain the pin F' of the spring F which presses upon



the upper cutter B, and the lever C is fitted into the sleeve D' of the forked crosshead *d* which has two prongs arranged one on each side of the spring F. A pin *f* passes through a slot in the sleeve D' so as to allow it to turn on its axis, and through the lever C and pin F'. The lever C works on the cylindrical nut H, which is provided with ball bearings as shown, and is screwed upon the pin G, being locked upon it by driving a conical drift into the hole *g* or by lock-nuts. The pin G is made in a piece with the part E pivoted to the casing at *e* and adjusted by a nut and link as described in the former Specification.

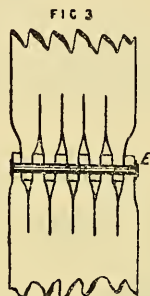
7277. Glossop, J. April 16.

Horse breaking and training harness.—Relates to dumb jockeys for use in breaking-in or forming the mouths of young horses. Fig. 2 shows a side view of part of the dumb-jockey; when in position the horse's head would be to the right of Fig. 2. The dumb-jockey consists of two arms A, A' pivoted together at *b* so as to have the form of the letter X in front view. The arms A' below the pivot are padded to fit the horse's back, carry loops for the guiding-reins, and are attached to the girth. The arms A above the pivot are hinged at *e*, and the two parts of each arm A are connected together by straps *g*, *h* and a rubber or other spring *i*, from which there passes a strap *m* to the tail band. Reins *f* are fixed to the top of the arms *a* and to the bit. As the horse moves its head sideways or extends its neck, one or both of the arms *a* turn outwards, at the same time exerting an elastic pull.

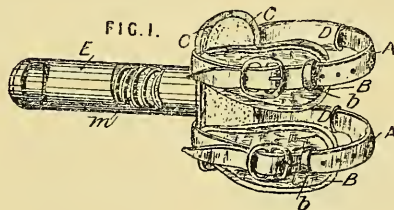


7467. Gasking, A. J. April 20.

Fastening straps, couplings for. The ends of the lengths of straps &c. to be joined are slit at *c, c, c* and perforated at *d, d, d*; the tongues so formed are turned at right-angles, those at one end of the strap inserted between those of the other, and a pin E passed through the perforations. To produce a flat strap, the tongues are turned alternately to the right and to the left; to produce a concave strap, the adjacent tongues on one side of the belt are turned one way and those on the other side the other way. The tongues may be tapered and rounded at the ends, and may be of different widths. The pins may be in two or more lengths and may be hollow; they may be oval in section, or two pins may be used, side by side. Wires, laces, or cords may be used instead of pins.



7551. Hague, L., and Bolles, W. April 21.

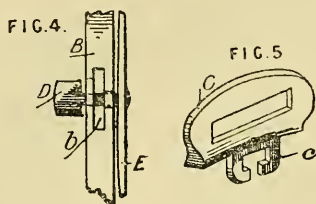


Horse-boots with anti-interfering attachments. The boot consists of pads B, B, C connected by buckled straps A which pass through loops *b* and beneath the outer leather surface of the pad C. Tubes D are placed on the straps A to prevent chafing. The pad C has riveted to it the anti-interfering device E, which consists of a solid rubber rod or of a leather tube containing a spiral spring *m*.

7762. Boulton, A. J., [Mayer, A.] April 25.

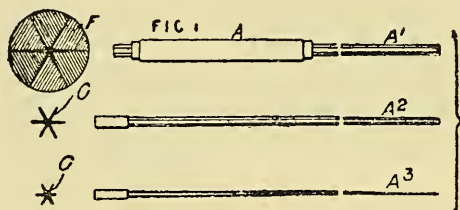
Stirrups, safety.—Fig. 4 shows a plan of the top of the bow, and Fig. 5 the detachable eye. The eye C is formed with hooked lugs *c* which are adapted to fit into the vertical slot *b* in the top of the bow B and be held therein by a T-shaped pin D, which passes through a transverse slot and

is attached to a spring bow E which lies in front of and is riveted to the main bow B. If a fall



occurs, the rider's foot presses the two bows together into the position shown, and so liberates the stirrup from its eye C.

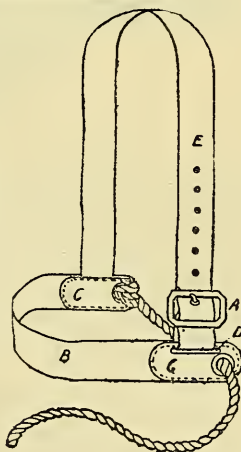
7894. **Elliott, G. W.** April 27.



Whips.—The different lengths of the stocks of whips &c. A¹, A², A³ are made of steel &c. of a star-shaped cross-section C. For the handle A the angles may be filled up with wood, as shown at F, or it may be made of a tube with reduced ends.

8237. **Hirst,**
T. May 2.

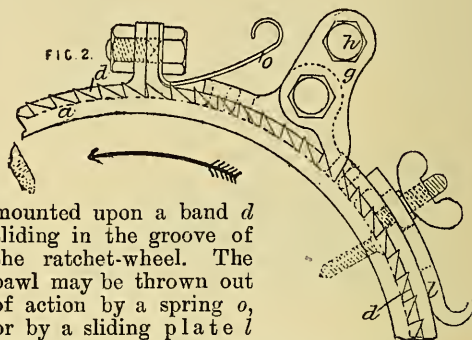
Halters.—The noseband B is tipped with leather &c. C, and one end of the head-strap E passes through a slot D in one of the leather pieces and is adjusted by a buckle or clasp A.



8844. **Handy, G.** May 10.

Rein holders.—The object is to prevent animals attached to vehicles from running away when left unattended. Grooved ratchet-wheels *a* are attached

to the naves of the front wheels, and the reins are attached to the pin *h* of the pawl *g*, which is



mounted upon a band *d* sliding in the groove of the ratchet-wheel. The pawl may be thrown out of action by a spring *o*, or by a sliding plate *l* mounted upon the band *d*.

When the horse moves forwards, the ratchet-wheels move in the direction of the arrow, and the reins are tightened.

8994. **Smith, C. A.** Oct. 31, A.D. 1891, [date claimed under Sec. 103 of Patents &c. Act, A.D. 1883].



Nosebags.—Relates to the construction of feeding-troughs, mangers, nosebags, and similar feeding-appliances. Fig. 3 shows a manger in section. The bottom, which is preferably in all cases of metal, is made with a number of hemispherical projections 3, to prevent the animal from eating the corn too quickly and without sufficient mastication.

9144. **Kennedy, O.** May 13

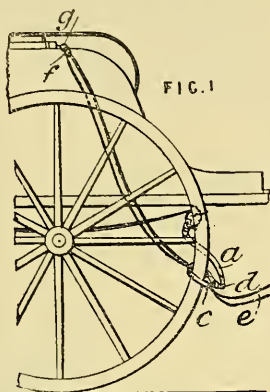
Fastening check reins. The strap 20 is connected at its forward end to the bearing or check rein, and passes backwards between the rollers 13 of the strap guide and beneath a roller on the pawl 15 which is



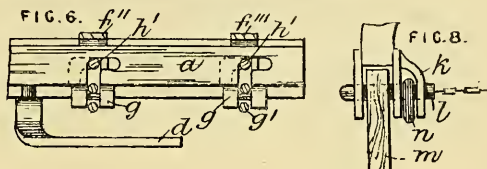
pivoted at 16 to the bracket 14 and is provided with a projection 18 to engage with the catch 19 fixed to the strap 20. To uncheck the horse, the driver pulls the strap 20 slightly, and then gently releases it. To check the horse, the strap 20 is pulled till the catch 19 is slightly beyond the projection 18, and is then let go suddenly.

9269. Boulton, A. J., [McCall, A.]. May 16.

Stopping and controlling runaway or restive horses; rein holders.—A strap or chain *a* is connected to the shaft or other part of the vehicle, and is looped round the felloe of the wheel and the reins *e*, being held in position by a hook *c* and loop *d*. A ring *f* secures the reins to a snap-hook *g* on the vehicle, while allowing the reins to run freely through the ring. If the horse moves backwards or forwards a strain is put on the wheel, and hence on the horse, while in the case of forward movement a strain is also put on the horse's mouth by the reins.



and thence to the upper cutter. The sleeve *T*, Fig. 6, of the flexible shaft is connected to the clipper by a pin joint, the two opposite pins of which are connected by a bow spring *Q* or by a bolt and nut. The flexible shaft carries a wheel *R* formed with ball-shaped teeth to fit into a wheel, Fig. 9, having a number of sockets as shown.

10,053. Bushby, W. C. May 27.

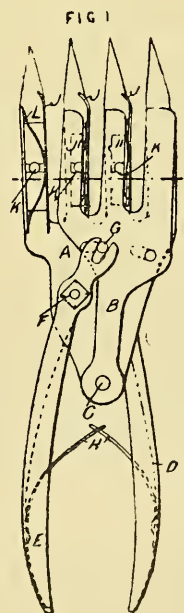
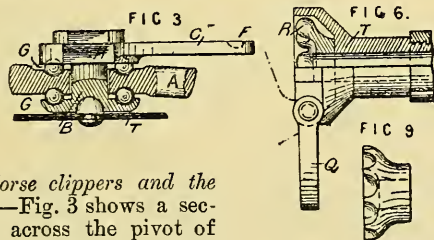
Runaway horses, releasing; fastening traces &c. Fig. 6 shows a sectional plan of part of the releasing-device as applied to a pair-horse vehicle. The traces are attached to hooks *g'* fixed to plates *g* which embrace the bar *a* and are connected together by pins *h'*. The pins *h'* work in L-shaped slots in the bar *a* which may be slid to and fro in brackets *f''*, *f'''* by a lever *d*. Fig. 6 shows the parts in the releasing position. Fig. 8 shows a plan of the releasing-device as applied to a one-horse vehicle. The shafts *m* and trace hooks *n* are held in the brackets *k* by bolts *l*, which may be drawn by a chain provided with a suitable handle for the driver. The end of the pole may carry an open fork for the pole-chains.

9353. Thompson, J. A. May 17.

Horse clippers and the like.—Relates to appliances for gathering the leaves, sprigs, or shoots from tea bushes. The appliance is in the form of a knife, hook, sickle, clipper, or shears, with a receptacle composed of a plate *a* with sides *d*, and attached to the cutting blade or blades to collect the cut shoots. Fig. 4 shows a pair of ordinary shears *b* with the receptacle attached.

**10,294. Jonas, J. May 30.**

Clippers.—Apparatus for plucking tea consists of two comb-like blades, pivoted together and provided with means for holding the shoots which are cut off until the blades are separated again. The blades *A*, *B* are pivoted at *C*. The handle *D* is fixed to *A* whilst the handle *E* is pivoted to *A* at *F* and an extension engages with a pin *G* on the blade *B*. Springs *H* tend to force the handles apart. The shoots are held when cut between the edges of the blade *B* and plates *J* fixed to *A* at *K* and forced outwards by springs *L*.

**9720. Ashberry, P., and Barnes, W. May 23.**

Horse clippers and the like.—Fig. 3 shows a section across the pivot of the actuating-lever, and Figs. 6 and 9 show the means for jointing the cutter to the part in which the flexible shaft works. The actuating-lever *A* oscillates on ball bearings *G* between the pressure plate *C* and the head of the bolt *B* supported on the casing *T* by a ball-and-socket joint. In the place of this joint, the plate *C* may carry trunnions at *H* to fit into slots in the upper part of the casing. The plate *C* is pressed down by means of an adjustable screw passing through the casing and fitting into the depression *F*. This pressure is communicated to the lever,

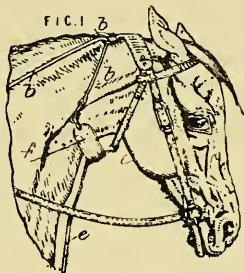
10,795. Nelson, T. G., Gelabert, W. P., and Smith, J. J. June 7.



Fastening straps, buckle attachments and loops for. The metal loop has the form shown in Fig. 1, and is attached close up to or at a slight distance from the buckle C, Fig. 2, by the strap B riveted in one or in two places by rivets *c*. Straps may be passed through the loops *a³*, *a³*, Fig. 2, as shown.

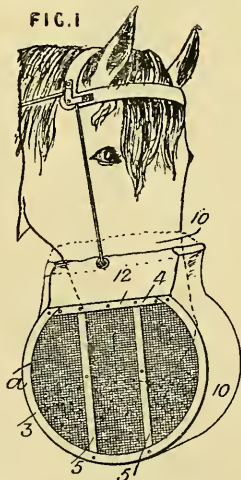
10,826. French, C. B. June 8.

Stopping runaway horses.—The horse is controlled by a throat band *f*, which is kept in place by the strap *e* connected to the ordinary throat strap and to the hames. The throat band is operated so as to press on the animal's windpipe by means of reins *b*. The throat band is of T-section and encloses a curved metal strip.



11,172. Lake, H. H., [Williams' Folding Feed-Basket Co.] June 14.

Nosebags.—The sides *a* of the bag are composed of wire cloth held in a metal frame 3, 4, 5. The strip 3 is of trough section, and encloses the edges of the wire cloth and of the canvas &c. part 10, which are wrapped round a rod within the strip 3. The upper part 12 is of cloth, and may be drawn round the animal's nose by a string.

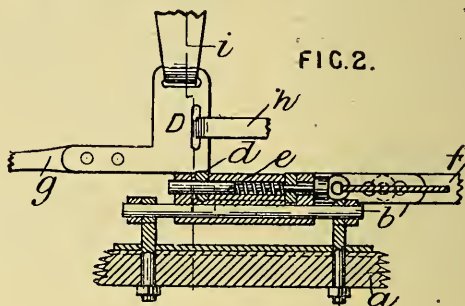


11,460. Haines, J. B. June 18. Drawings to Specification.

Pads; saddles; collars, neck; collars, breast, breeching.—The padding consists of inflated rubber

&c. bags used either alone or in combination with other padding. These bags are attached by a cloth covering them and stitched to the leather part, or by staples. The pads are stated to be applicable to riding and cart saddles, cruppers, breast and neck collars, and to girths and other straps.

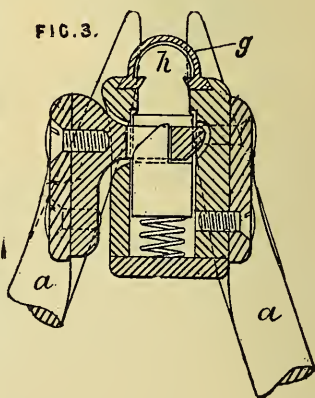
11,510. Moodie, T. S. Nov. 21, A.D. 1891, [date claimed under Sec. 103 of Patents &c. Act, A.D. 1883].



Fastening traces, backbands, breeching, &c. The traces *f* are permanently attached at their rear ends to a whipple-tree or other draught device on the shafts. On each shaft *a* is mounted near its front end a horizontal rod *b¹* on which slides a sleeve recessed at its upper portion for a spring bolt *e* which secures a plate *D* to the sleeve *c* by passing through the eye *d* on the plate. The front end of the trace *f* is permanently attached to the sleeve *c*. The plate *D* is supported by the backband *i*, and serves to connect the breeching *h* and the pulling-straps *g* with the sleeve *c*. Thus, to release the horse from the vehicle, it is only necessary to withdraw the spring bolt *e* and disconnect the plate *D* from the sleeve *c*. If the horse is unmanageable, the driver can release him by pulling back the bolt *e* by means of a cord.

11,534. Fell, W. T. June 20.

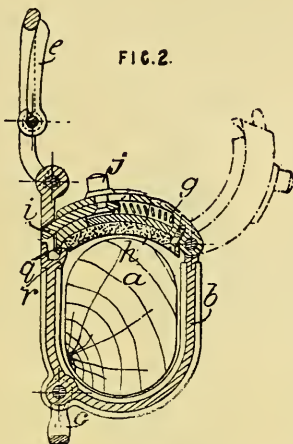
Collars, neck; fastening collars, spring catches for. The collar is divided at the top and tends to spring open by reason of a metal rod *a* which takes the place of the forewale and is covered with leather. The rod *a* preferably takes the place of the hames also. The afterwale is made in the usual manner. Fig. 3 shows the fastening for the ends of the



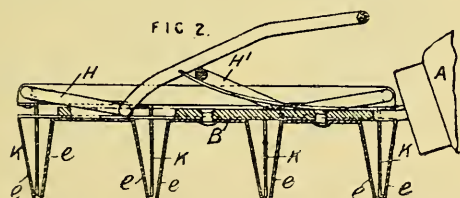
rod *a*. It consists of an eye and a spring catch provided with a push *h*, which is locked by a U-shaped slide *g*.

11,902. Fischer, C. L. June 25.

Tugs, shaft; fastening.—Fig. 2 shows a longitudinal section of the tug which consists of a U-shaped piece *b* of metal covered with leather to which are hinged a buckle *e*, a loop *c*, and a cover or locking-piece *g*. The back and belly band passes through the buckle *e* and loop *c*. The piece *g* is lined with india-rubber &c. *h* to prevent injury to the shaft *a*, and encloses a spring locking-bolt *i* which may be drawn back by a stud *j*. The piece *g* is formed with a projection *q* to catch against the projection *r* so as to prevent the arms of the U-shaped piece *b* from spreading apart.



12,022. Schweim, C. J., and Schweim, W. June 28.

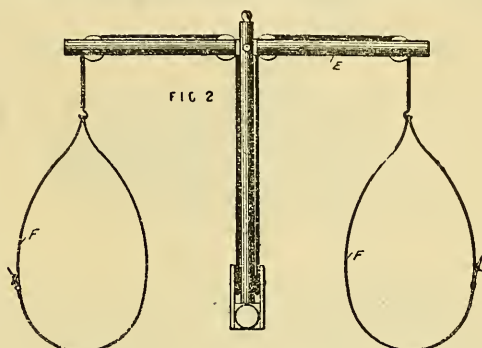


Currycombs.—The comb is provided with a cleaning-device which consists of a number of plates *e* arranged on each side of the blades *K* and fixed to a frame *B*. The blades are carried by a frame which can be moved towards or away from the frame *B* by linkwork *H, H¹*. Either frame may be attached to the handle *A*.

13,033. Hedges, C. July 15

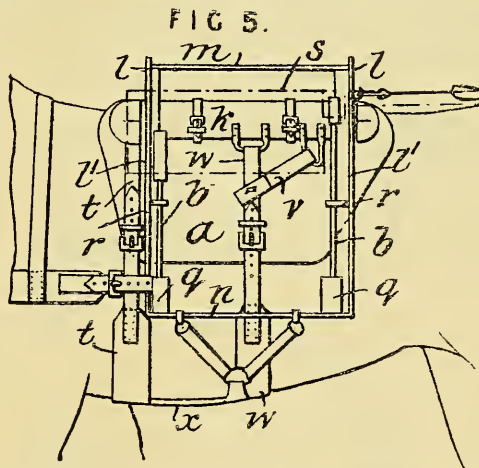
Preventing horses from falling.—Two slings *F* passed round the horses are suspended from a yoke

or bar *E* supported above the shafts of the vehicle. The shafts are prevented from moving downwards

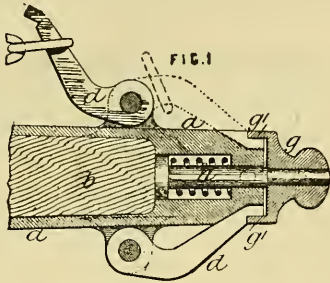


by tie-rods or suitable strengthening-devices. The form of the supporting yoke or bar may be varied.

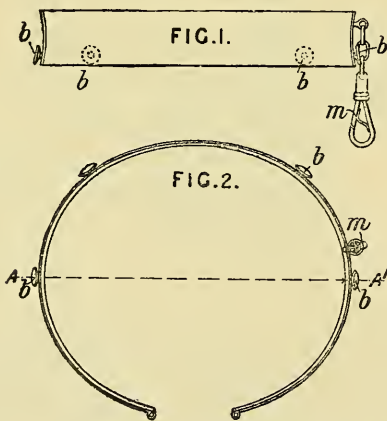
13,140. Bogle, A. H. July 18.



Saddles for transporting machine guns &c. The object is to steady the load by supporting it on arms bearing against the lowest part of the saddle. Two forms of saddle are described, in which, respectively, a single load is supported centrally over the animal's back, or two loads are supported, placed one on each side. Fig. 5 shows the latter form. Each load *s* rests in forks at the extremities of the uprights *b, b¹*, which are guided in arms *r, r¹* and press upon springs in sockets *q, q¹* fixed to the part *n* of the framework. The framework consists of bars *m, l, l¹, n* and adjustable side bars *k*, beneath which is the padded part *a* resting on the animal's back. The saddle is attached to the animal by straps *t, x, w, v*, as shown, the girth *w* bearing on the ribs of the animal. In the saddle for supporting a single central load the arms *b* meet over the back of the animal.

13,483. **Murdoch, R. M.** July 23.

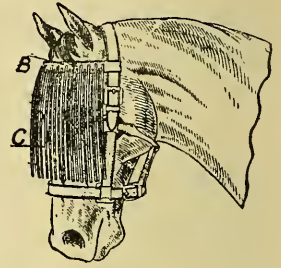
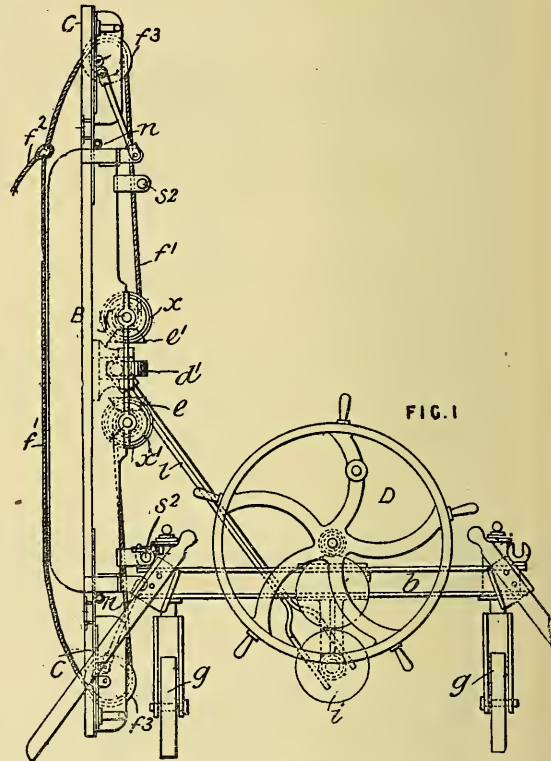
Fastening traces and pole-chains, slipping-devices for. The pole-chains, traces, or other parts of the harness are fastened by a slipping-device which admits of their being readily released if the horse falls. Fig. 1 shows the device as fitted to the end of the pole *b*. It consists of a socket *a* carrying two pivoted arms *d* which are threaded through the end links of the pole-chains. The free ends of these arms are closed on the socket and held fast by a collar *g*¹ carried by a knob *g* on the end of a spring plunger *h*. The arms can be quickly released by pulling out the knob; or one arm can be released, while the other is held fast, by rotating the knob until a slot in the collar *g*¹ comes opposite to the arm.

13,599. **Pass, E. de,** [*Arout, A. d*¹]. July 26.

Fastening horse-boots. Relates to a spring metal band for retaining in position the leather or flannel "stockings" sometimes worn by horses. Fig. 1 shows a section on the line A—A¹, Fig. 2, and Fig. 2 a plan. The metal band is somewhat incurved in cross-section, and adapted to be opened out to be sprung round the leg of the horse. It may have studs *b* on either side to engage with buttonholes in the stocking &c.

13,651. **Lawson, G.** July 27.

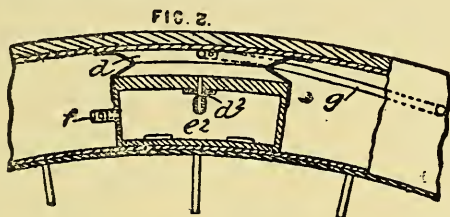
Bridles and halters.—The front or forehead piece *B* has a number of streamers *C* to prevent flies &c. from settling round the horse's eyes.

13,823. **Daviau, J.** July 29.

Animals, stocks and like appliances for holding; slings, lifting and like.—The apparatus is for "throwing" animals, and consists of a platform to which the animal can be strapped and which may be turned from a vertical to a horizontal position, carrying the animal with it. The slinging &c. harness consists of a wide bellyband, secured by two girths, a front strap, and breeching. Fig. 1 shows a side view of the apparatus. The platform *B* carries rollers *x*, *x*¹ and pulleys *f*³, *f*³ for the ropes *f*¹ to which the animal is attached by ropes *f*² connected to loops at the top of the girths. The rollers are turned by worm gearing *d*¹ and bevel gearing *e*, *e*¹. Suitable holes and belaying pins are arranged for attaching the head and feet of the animal. The ends of the platform consist of flaps *C*, *C* hinged at *n*, *n* and provided with stays for making them rigid. The platform is pivoted in

open bearings at each end s' to the fixed frame b , and can be turned into a horizontal position on one bearing and then turned up again on the other. The means for turning the table consist of rods l connecting the platform to right and left handed nuts running on opposite ends of the screwed rod i , which may be rotated by a hand-wheel D through suitable gearing. In some cases, as during an umbilical operation, the legs of the animal are separately connected to cords passing over pulleys on the top of the four bars of a pyramidal frame which fits on to the platform. Two of these bars may be used as shafts for drawing the apparatus from place to place upon the wheels g, g .

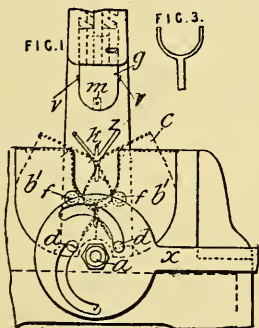
13,898. **Martin, P. A.** July 30.



Saddles.—Relates to an automatic pumping-device for inflating cycle tyres, velocipede and other saddles, and the like, and also to relief or safety valves for use with such apparatus. Fig. 2 shows the application to a pneumatic tyre, the application to saddles being substantially similar. A collapsible tubular chamber d is fitted to the inside of the tyre, and communicates with the external atmosphere through a tube g and with a second chamber e^2 through a valve d^2 . This latter chamber communicates with the interior of the tyre through the valve. Thus, as the wheel rotates, the alternate collapse and expansion of the chamber d forces air into the tyre. The relief valve consists of a tubular stem fitted to the tyre, and having an outlet into the air, closed either by a spring valve or by a rubber cap held in place by a spring ring.

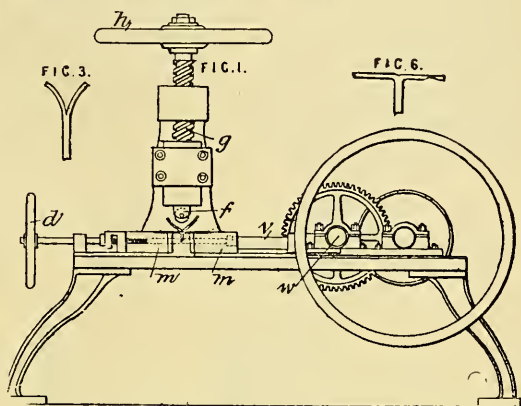
14,213. **Raffloer, J.** Aug. 6.

Spurs, making. The Y-shaped blank z , while gripped between the jaws b^1, b^1 , is acted on by the die g of a powerful fly screw press so as to curve the arms z to the form shown in Fig. 3. The jaws b^1 are pivoted at f and carry pins d which are operated upon by cam slots in the disc c pivoted at a and provided with a lever handle x . The die g has a recess m for the pin k with which the blank may



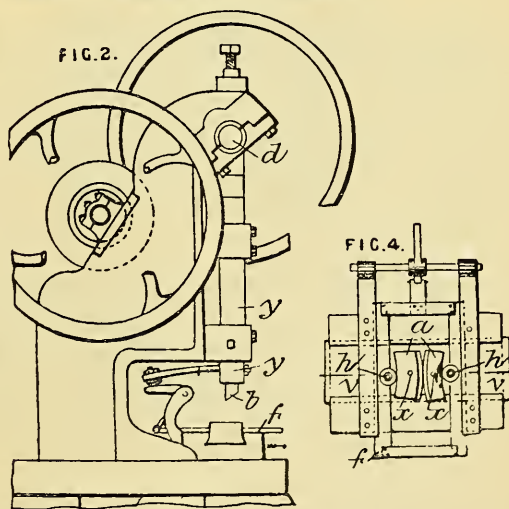
be provided, and has hooks or projections v, v for engaging with the blank and drawing it up when the screw of the press is reversed.

14,214. **Raffloer, J.** Aug. 6.



Spurs, making. The object is to convert the Y-shaped blanks described in Specification No. 14,215, A.D. 1892, and shown in Fig. 3, into T-shaped blanks, Fig. 6. Fig. 1 shows an elevation of part of the machine employed, which consists of a vice actuated by the hand-wheel d and attached to the rod v , by which it is moved between slides m into a position beneath the pressing-roll f on the lower end of the screw spindle g provided with the hand-wheel h . The rod v is reciprocated by a crank on the shaft w geared to the pulley shaft as shown. The stem of the heated Y-shaped blank is first gripped in the vice, and the arms of the blank are roughly hammered down. The blank is then moved beneath the roll f , by which the finished blank, Fig. 6, is formed.

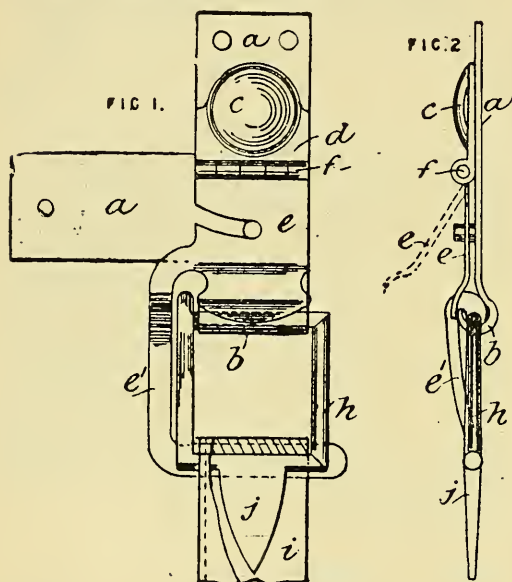
14,215. **Raffloer, J.** Aug. 6.



Spurs, making. The object is to split and open

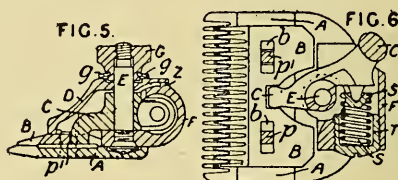
out the end of a heated cylindrical bar to form a Y-shaped blank. Fig. 2 shows a side elevation of part of the apparatus, and Fig. 4 a plan of the slide *f*, Fig. 1, with its adjacent parts. The machine consists of a knife *b* reciprocated by a crank on the shaft *d* and a pair of jaws *a* grooved to receive the heated rod. The jaws are pivoted at *x, x* to lateral slides *v, v* and are acted on externally by rollers *h, h* fixed to the longitudinal slide *f*, which derives its motion from the knife slide *y* through linkwork. As the splitting proceeds the knife forces out the ends of the Y-shaped blank against the rear ends of the jaws *a, a*, which are separated by the rollers *h, h*.

14,729. Head, J. E. Sept. 20.



Stirrup straps, suspending, safety saddle-bars for, particularly applicable to ladies' side saddles. The stirrup leather *i* is attached to the link *h*, which is formed with a tongue *j* to prevent the link from turning round. The link *h* is supported by the hook *b* on a plate *a* which is riveted to the saddle-tree. A plate formed in two parts *d, e* hinged together at *f* is pivoted at *c* to the plate *a* and covers the opening to the hook *b*. When the rider is mounted a leather flap provided with a suitable metal piece is pressed by the thigh against the plate *e*, and prevents the link *h* from leaving the hook *b*. If, however, the rider is thrown, the plate *e* turns sideways or upwards and liberates the link. The plate *e* is prevented from moving while the rider is in the act of mounting by means of a tab fixed to the flap and passing through a loop on the stirrup leather, or the plate *e* may be formed with a tongue *e'* for the same object.

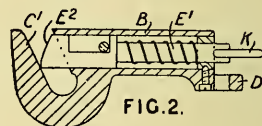
15,129. Johnson, J. Y., [Brown & Sharpe Manufacturing Co.]. Aug. 23.



Horse clippers and the like.—Figs. 5 and 6 show respectively a vertical and a horizontal section through the head of the clipper. One handle is fixed to the part *F* carrying the comb plate *A*; the other handle *C* is pivoted at *E* and takes into the cutter *B*. A spiral spring *S* close to the pivot bears against the handle *C* by means of the intervening piece *s*. The end of the recess in which the spring is placed is preferably made separately, as shown at *T*, and the end of the recess preferably overhangs the piece *s* so as to limit its outward movement when the handle *C* is removed. The face against which the rear end of the spring bears may be inclined to make the spring take a truly axial direction. The cutter *B* is slotted at *b* for pins *p, p'* either fixed to the comb plate *A* or to the cover-plate *D*. This plate bears at two points on the cutter *B*, and at one point *Z* at the rear on the frame *F*. It is held down by a nut *G* and spring washer *g*. A space is left between the cover-plate *D* and the hub of the lever *C* which bears beneath an overhanging part of the frame *F*.

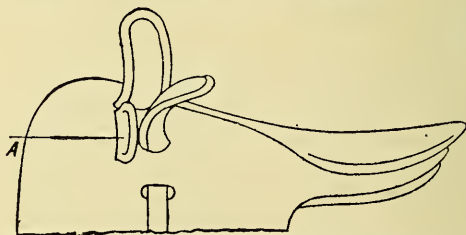
15,184. Baker, F. T. K. Aug. 23.

Dog leashes.—A hook is formed with a sloping point *C'* and with a barrel *B* terminating in a loop *D* for the usual strap. Within the barrel slides a spring bolt *E'* formed with



a sloping end *E^2* and with a ring *K* for the releasing-cord. The ring on the dog's collar is engaged with the hook by pressing it against the sloping part *E^2*, one hand only being necessary for this operation. The dog is released by pulling back the spring bolt *E'*.

15,215. Wilton, W. P. Aug. 24.

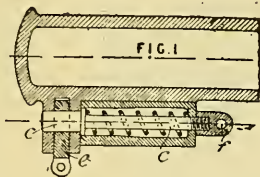


Saddles.—In side saddles, a third support *A*, detachable or otherwise, is placed in the position

shown to receive the pressure of the calf of the leg.

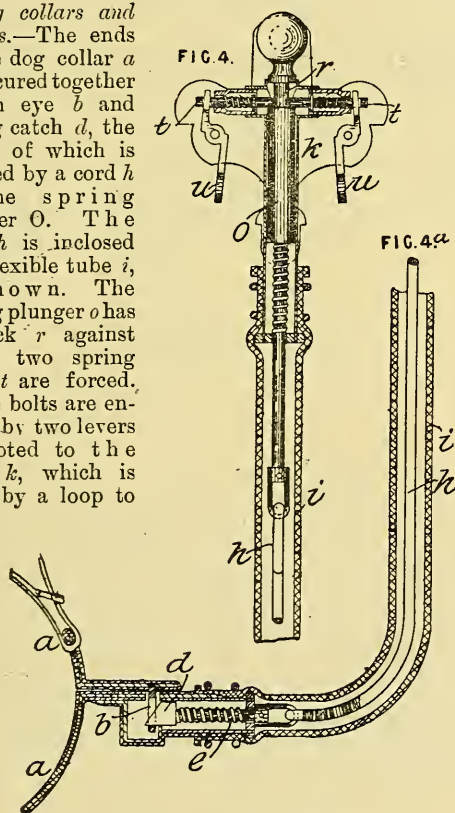
15,478. Parker, P. Aug. 29.

Fastening traces and pole-chains, slipping-devices for. The pole cap or each end of the splinter bar &c. is fitted with a spring bolt *c* which holds in place an eye *e* for the trace or two eyes for the pole-chains. The bolt is withdrawn by a cord passing from the eye *f* to a lever within reach of the driver. By this device fallen horses may be immediately released.



15,716. Vollmann, H. Sept. 1.

Dog collars and leashes.—The ends of the dog collar *a* are secured together by an eye *b* and spring catch *d*, the bolt *e* of which is secured by a cord *h* to the spring plunger *o*. The cord *h* is inclosed in a flexible tube *i*, as shown. The spring plunger *o* has a neck *r* against which two spring bolts *t* are forced. These bolts are engaged by two levers *u* pivoted to the plate *k*, which is fixed by a loop to



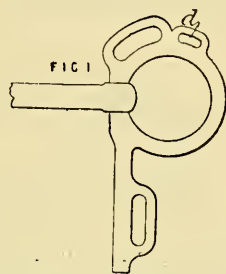
the hunter's waist belt. The spring of the plunger is made stronger than that of the catch *d*, so that, on pressing the levers *u* together, the catch is drawn back and the dog released. In attaching a dog to the leash the plunger *o* is first pushed inwards and locked, and then the catch *d* is free to snap into the loop *b* on the collar.

15,811. Boswell, H. W. Sept. 3.

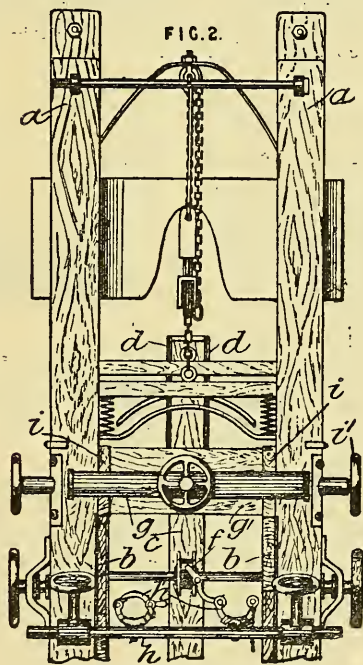
Whips.—The whip stock is made of solid-drawn metallic tubes.

16,006. Behrens, N., and Smith, N. B. Sept. 7.

Bits.—The bit cheeks are made in the form shown, the curb being attached to the loop *d*.



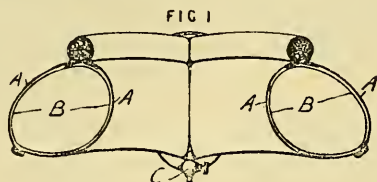
16,028. Birkbeck, H., [Hühn, C.] Sept. 7.



Animals stocks for holding.—The apparatus is for holding animals while they are being shod or operated upon. Fig. 2 shows an end view of the apparatus, which consists of four strong uprights *a* connected by side walls *b*. The horse is drawn into the apparatus by a rope connected to the pulley shaft *f* until its breast rests against a transverse bar *d*, and its muzzle rests between the parallel iron bars *d, d* joining the breast bar to the post *c*. The horse is restrained laterally by side boards *i* adjusted by screws *i'*. It is kept in at the back by a board *g* adjustably attached to the cross-bar *g*, and its hoofs may be drawn up to and attached to holders *h*. The bars *g, h* are hinged

at one end to admit the animal to the apparatus. Openings are made in the walls *b* to enable the fore hoofs to be readily reached.

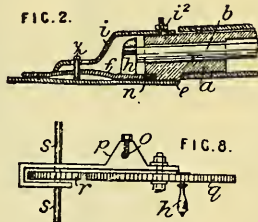
16,147. Stewart, W. Sept. 9.



Collars, neck; saddles; pads.—Collars, saddles, &c. are formed with hollow inflated pads. Fig. 1 shows a section of a collar with inflated rubber &c. bags *B* enclosed in a leather covering *A*. A stop-cock *C* may be employed for introducing the air or gas. One or more pads are similarly secured beneath a saddle. The inner bag *B* may be dispensed with and the covering *A* inflated.

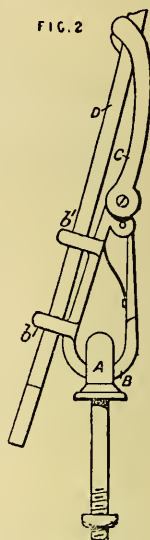
16,288. Twigg, G. Sept. 12.

Horse clippers and the like.—Relates to two forms of clippers, one worked by hand and the other by a flexible shaft, and to mechanism for driving the flexible shaft. Fig. 2 shows a vertical section of a clipper driven by a longitudinal shaft *b*. This shaft passes through a tubular part *a*, to which is attached the lower cutter plate *e*. The upper cutter plate *f* is guided by the lip *n* on the part *a*, and by the T-headed pin *z* secured to the plate *e* and passing through slots in the plates *f* and *i*. The upper cutter plate is reciprocated by a crank-pin on the rod *b*, working in the bridge-piece *h* secured to this plate. The pressure plate *i* is secured to the tubular part *a* by a screw *i*², and has a T slot for the pin *z*. In apparatus worked by hand a similar T-headed pin is used supported by a disc formed on one of the handles. According to the Provisional Specification, a form of shearing-apparatus is provided with a movable cutter carrying a pivoted bar, actuated by a cam carried by a spindle. The spindle fits into a cup attached by a screwed ring to a shaft. Fig. 8 shows the mechanism for rotating two flexible shafts *s, s* simultaneously. The shafts are fixed to the toothed wheel *r* driven by a larger wheel *q* provided with a handle *h*. Both wheels are mounted on a bracket *p* carried by a standard *o*. A single flexible shaft may be worked by a grooved pulley mounted on a bracket,

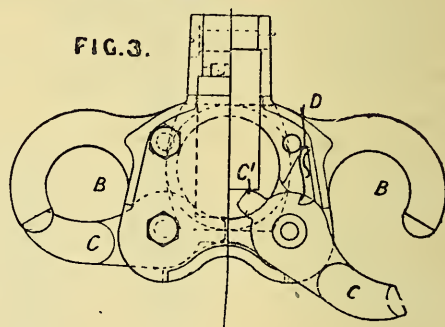


16,345. Aitchison, J. T. Sept. 13.

Fastening backbands, hooks for. The backband *D* is fastened to a buckle *C* hinged to a spring hook *B* which takes into the eye-bolt *A* secured to the shaft. The hook may have guide-loops *b*¹, *b*¹ as shown. This fastening takes the place of the ordinary shaft-tug which passes round the shaft.



16,381. Bailey, E. Sept. 13.

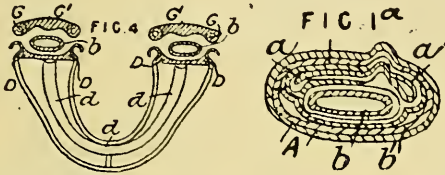


Fastening pole-chains &c. The eyes *B* on the end of the pole, to which the pole-chains are attached, are made so that they can open by means of hinged parts *C* which are normally held closed by springs such as *D* and by a sliding bolt or strong spring catch which acts upon teeth or projections on the hinged parts such as *C*¹. When the horse falls, the driver pulls back the sliding bolt or releases the spring catch, and the weight of the horse's head pulling on the eye *B* causes it to open and release the pole-chain. The divided spring eyes, instead of being fitted on the pole, may be fixed to the hames or to the breast collar or breast band of Dutch harness.

16,679. Horsley, R., and Webb, A. Sept. 19.

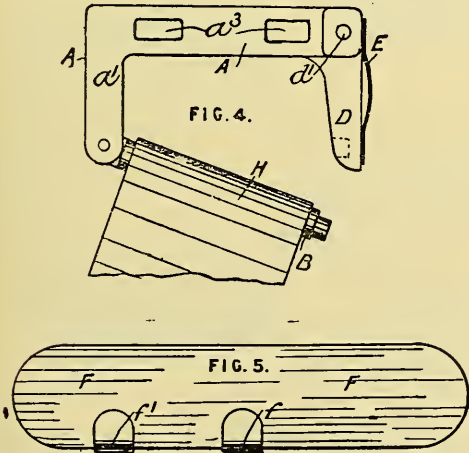
Lining and padding; collars, neck; saddles.—Relates to linings or padding for the collars, saddles, and other parts of harness and saddlery. The Provisional Specification states that the invention

may be applied to the seats of railway carriages. One or more tubes or bags &c., inflated with air or other gas or filled with liquid, are suitably secured to the casing of the part to be padded. By



one method the tubes are simply held in place by the turned-in edges of the casing. Fig. 1^a shows a second method as applied to a horse collar. The pad *b* is secured to the casing *a* by an inner covering *b*¹ of canvas &c., and an outer covering *A* of rubber &c. The pad is protected from injurious contact with the casing by various layers of linen, rubber, &c. Fig. 4 shows a third method as applied to a horse collar. The tube *b* is held in contact with the casing *D* by a covering *G*¹, the edges of which are secured to the channelled edge of the casing by a cord or wire through the channel *G* or by inflating such tubular edge. The covering, according to its application, may be of rubber, leather, cloth, vulcanite, papier mâché, or metal &c. In the case of riding saddles, the seat above this padding may be hollow and perforated for ventilation. The roll *d* of the collar may be strengthened by a metal tube. A suitable valve and connections are supplied for inflating the padding.

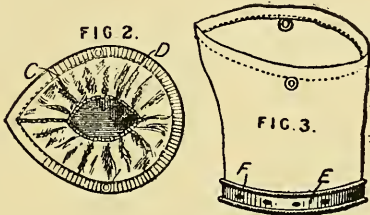
16,760. **Phillipps, G.** Sept. 20.



Stirrup straps, suspending, safety saddle-bars for. The stirrup leather *H* is hung on a bar *B* pivoted to the arm *a*¹ of the frame *A* and arranged to fit into a socket in the arm *D* of the frame. The arm *D* is hinged at *d*¹ and controlled by a spring *E*. A spring in the arm *a*¹ may be used to urge the bar *B* downwards. The frame is suspended from the

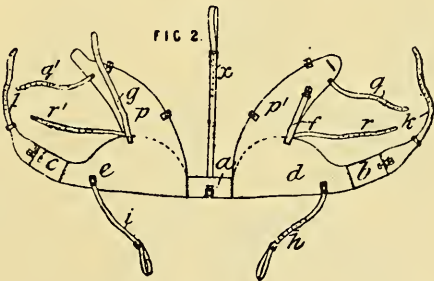
plate *F*, which is fixed to the saddle-tree, by the hooks *f*¹ engaging with the slots *a*³. If the rider is thrown the frame *A* may become disengaged from the plate *F*, or the bar *B* may open out to free the stirrup leather *H* as shown. The arm *D* may be dispensed with, and the bar *B* made to fit into the spring *E* or its equivalent.

16,835. **Barker, R. W.,** [*Economic Feed Bag Co.*]. Sept. 20. Amended.



Nosebags.—Fig. 2 shows a plan of the bag, and Fig. 3 an elevation. A diaphragm *C* having an opening for the animal's nose is fixed in the mouth of the bag. The diaphragm is made of an open meshwork, and has a spiral spring secured in the waterproofed band *D* round the opening. The bottom of the bag consists of a disc of wood to which the material of the bag is secured by nails &c. *F* passing through a metal strip *E*.

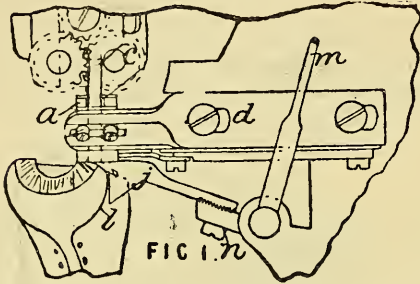
16,985. **Huth, M.** Sept. 23.



Collars, breast; collars, neck; pads.—Relates to a bandage for use with breast and neck collars for horses for the purpose of preventing or curing sores. It consists of three india-rubber web portions *a*, *b*, *c* and two leather breast pieces *d*, *e* provided with attaching-straps *f*, *g*, *h*, *i*, *k*, *l*, *x*. Flaps *p*, *p*¹ with straps *q*, *q*¹, *r*, *r*¹ are added when the appliance is to be used for preventing or curing shoulder sores. The straps *h*, *i*, *x* are attached to the bellyband; the straps *k*, *l* are passed through loops on the saddle or the like; the straps *q*, *r*, *q*¹, *r*¹ are carried round the collar

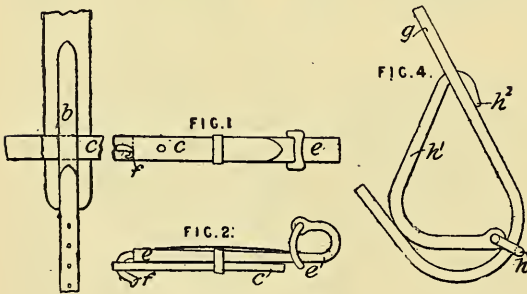
above the hame tugs; and the straps *f*, *g* are secured together over the animal's neck.

17,045. Dorman, W. H. Sept. 24.



Riveting-machines.—A screwing, nailing, pegging, riveting, or similar machine, for securing strips of leather or other material to parts of boots, harness, or other articles, is provided with guides *a*, *j* for the strip *c* and work *l*. The guide *a* has an inclined or curved passage of suitable size for the strip, and is extended to guide the outer edge of the strip in front of the point where the fastenings are inserted; it is secured adjustably by a slider *d* and screws. The guide *j* for the work is notched to receive and guide the inner edge of the strip, and is carried by a rack *n*, adjustable by a pinion and handle *m*.

17,493. Bishop, A. E. Oct. 1.

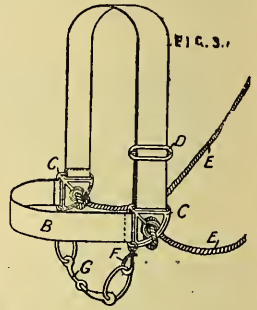


Backbands; tugs, shaft; fastening.—The traces *c* in double harness pass through loops *b* in the backband, and are adjustably fastened to the extension *e* by a hook *f* of the form shown in the two views, Figs. 1 and 2. The extension *e* is fastened to the splinter-bar. The shaft-tug, Fig. 4, consists of a metal piece *h*, with loop *h* and hook *h*² to engage with the backband *g*. The hook *h*² has the same form as the hook *f*, Figs. 1 and 2.

17,569. Thurman, J. E. Oct. 3.

Bridles and halters.

—The headband, which is adjustable by means of the sliding loop *D*, and the nose-band *B* are connected together by triangular metal pieces *C*. The hitching-rope *E* is knotted to one of these pieces, and may be knotted to the other piece also to form a curb. When used as a bridle a bit *G* is fastened to the hooks *F*, and the ends of the rope *E* are secured to the pieces *C* as shown.

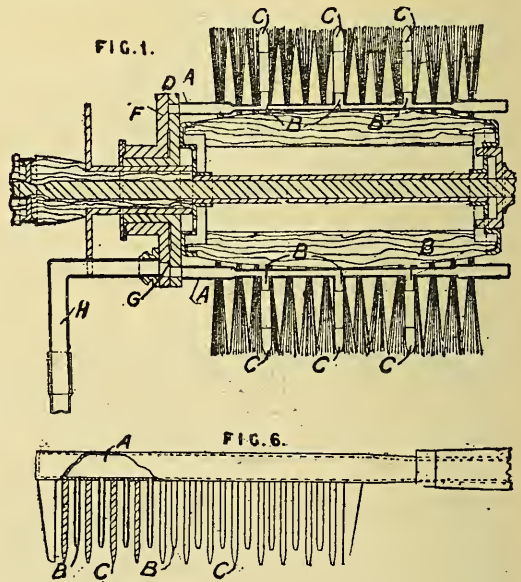


17,750. Campbell, C. Oct. 5.



Bridles; straps.—The parts of reins or other straps which wear against metal parts are either made of metal as shown at *A*² or are lined with metal as shown at *C*.

17,841. Upward, A. R., and Myers, A. Oct. 6.



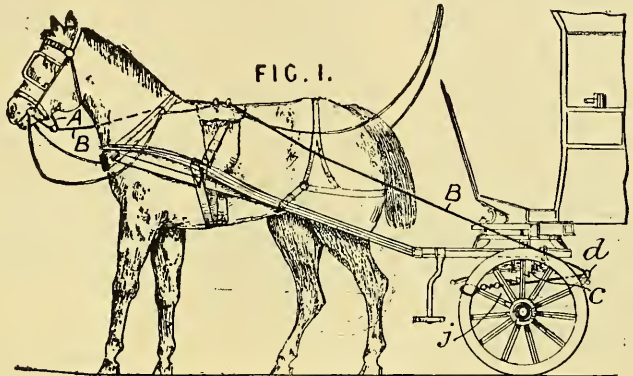
Combs; brushing-apparatus for grooming.—Brushes and combs are provided with means for

supplying jets of air. Fig. 1 shows a machine hair brush. Tubular bristles or flexible tubes C are carried by nipples B on the tubes A, which are fitted into the plate D. This plate works over the fixed plate F, which is slotted at G. Air is thus applied from the tube H to the bristles during part of the revolution of the brush. The bristles C

may be dispensed with, and the air jets caused to issue from fixed or revolving apertures or nozzles. Hand-brushes may be similarly provided, the stocks being hollow. Fig. 6 shows a comb with hollow teeth and back for this purpose. The brushes and combs may be used for horses and other animals.

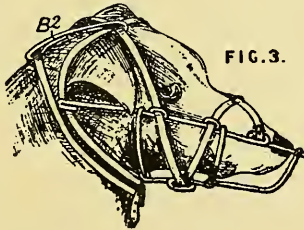
18,033. Nye, H. R. Oct. 10.

Bridles; rein holders.—The object is to enable a draught horse to be left unattended. A strap or rein B is attached by a spring hook to a chain or strap A hooked to the bit, and is also attached after passing through a loop d on the vehicle to a ring j on a chain c fixed to the vehicle and looped round the wheel. In two-wheeled vehicles the holding-strap B itself may be looped round the wheel and the mounting step, the chain c being dispensed with. If the horse moves backwards or forwards, the rein B is tightened automatically.



18,284. Bairstow, E., and Nichols, J. Oct. 12.

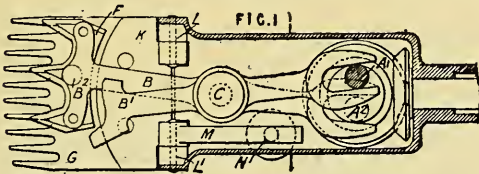
Muzzles for animals.—The muzzle consists of a lower part made of metal, preferably wire, and an upper part formed by a pair of leather or other straps or laces. The narrow lines on Fig. 3, with the exception of the strap B², represent the wire part, and the wider lines represent the two crossed straps.



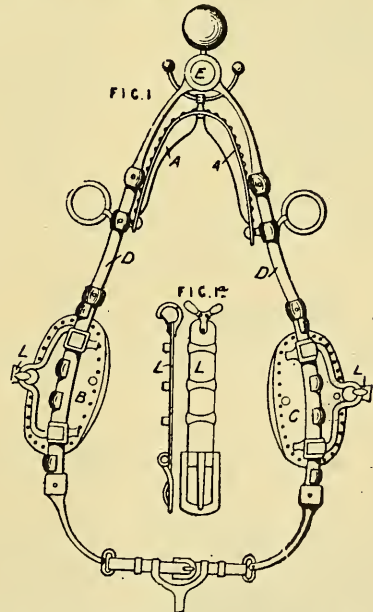
an arm M fixed to the plate K carrying the comb. The plate K is hinged at L, L' to the casing. A spring may bear upon the arm M. The cutter is enabled to lie evenly on the comb by the button B² on the actuating-lever B.

18,635. Lovely, R. Oct. 18.

18,290. Chapman, F., [Massey, G.]. Oct. 12.



Horse clippers and the like.—Clippers for shearing sheep, cutting hair, &c. are formed with a dummy lever B¹ to counterbalance the lever B which actuates the cutter F. These levers may be pivoted either on the same pin C as shown or on separate pins placed side by side. The levers are actuated by opposite crank-pins A¹, A² as shown. A door beneath the cutter enables the crank shaft to be taken out. The pressure of the cutter F upon the comb G is adjusted by a screw N which acts upon

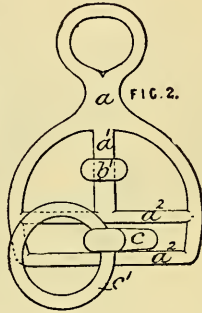


Collars, neck; pads; tugs, shaft.—The collar consists of the solid or hollow bars or hames D, and

the pads A, B, C adjustably connected to the bars. The bars are hinged at the top E or at their centres on each side. The tugs L are of thin metal provided with snap-hooks. In tandem harness two hooks are used, one for the collar of the wheeler and the other for the trace of the leader.

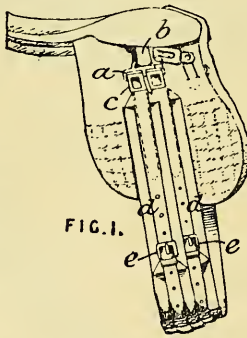
18,924. Benison, W. B., and Best, H. de B. Oct. 22.

Bits.—Fig. 2 shows a side view of the bit. There are two straight or curved mouthpieces, one of which is formed with eyes b^1 to slide vertically on the bars a^1 of the cheeks a , while the other mouthpiece c is formed with eyes for the rein rings c^1 and slides horizontally between the bars a^2 . A noseband may be attached to the ends of the lower mouthpiece c .



18,956. Benison, W. B. Oct. 22.

Fastening saddle girths, couplings &c. for. The upper ends of the girth or girths are secured to links or clips c , which hook into the slotted plates a . The plates a , one on each side of the saddle, are united by a strap b . The lower ends of the girth or girths are connected by straps d and buckles e , a leather or webbing sheath being made to slip over these ends of the girth.



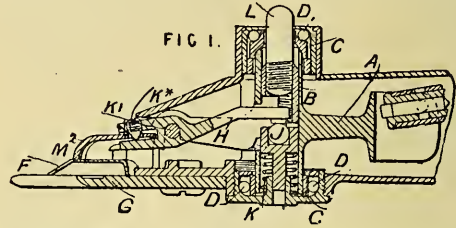
19,017. Ollivant, H. A. Oct. 22.

Whips.—Handles for whips are made from blocks of tough felt.

19,405. Moffat, J., and Virtue, W. W. Oct. 28.

Horse clippers and the like.—Relates to sheep-shearing &c. machines such as are described in Specification No. 20,833, A.D. 1891. The necessary pressure of the cutter F on the comb plate G is obtained by a forked spring plate M^2 which is held in a slot in the pressure lever H by a stud K^2 . The pressure lever H has claws to engage with the

cutter F, is trunnioned at K^1 to the vibrating lever A, and is pressed upwards at its rear end by a spring K acting on a vertical sliding pin I carrying the ball J which comes into immediate contact

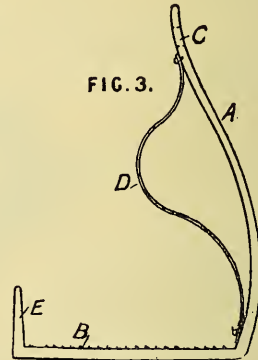


with the pressure lever H. The pin I is prolonged beyond the casing by a screwed pin L. By pressing on the pin L the pressure on the cutter F is relaxed, so that it may be removed for sharpening. The vibrating lever A is formed with a tubular boss B enclosing the pin I. The ends of the boss bear against rings C, C between which and the casing there are arranged antifriction balls D, D.

19,869. Rudd, W. Nov. 4.

Stirrups, safety.

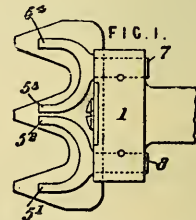
The stirrup has only one side A, which is broad and inclined as shown. The position of the eye C ensures that the tread B projects away from the horse, thus facilitating mounting. The tread may be fixed or made to revolve like a bicycle pedal. A spring D at the side or on the tread, or connecting the eye C with the projection E, may be used to prevent the foot from slipping under normal conditions.



19,977. Newall, J. W. Nov. 5.

Horse clippers and the like.—The object is to equalize the pressure on each tooth without using springs.

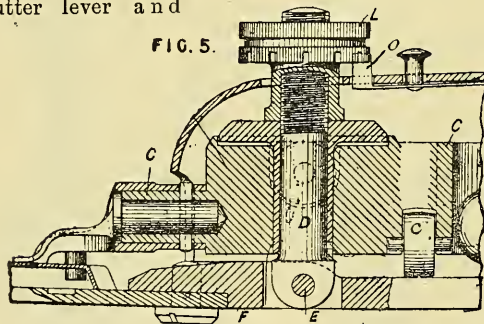
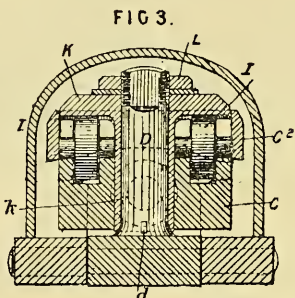
Two pairs of forks are pivoted to the crosshead 1. In the case of a three-toothed cutter, two arms 5^2 , 5^3 of the forks bear on the middle tooth as shown, but these arms are twice as far from the centre lines of the pivots 7, 8 as are the outer arms 5^1 , 5^4 . When the cutter has four teeth the arms are all equal, and each tooth has one arm bearing upon it.



rubber lined in parts as required with strong linen. The rubber projects beneath the frame *a*, which is slotted for the marginal projections *i*. The overshoe is held beneath the hoof *b*, provided with a shoe *s* or otherwise, by a band pivoted to the heel clips *m* and fixed to the long toe clip *e*. In a modification, the toe clip is replaced by two side clips to which the ends of two bands similar to the band mentioned above are secured after crossing at the toe. An air cushion *j* is introduced between the overshoe and the hoof. The Provisional Specification describes the overshoe without the frame *a*.

20,511. Burgon, C., and Burgon, H.
Nov. 12.

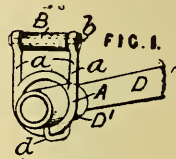
Horse clippers and the like.—Relates to sheep-shearing machines such as are described in Specifications No. 10,828, A.D. 1890, No. 5317, A.D. 1891, and Nos. 2805 and 7244, A.D. 1892, and consists of an improved bearing for the vibrating cutter lever and



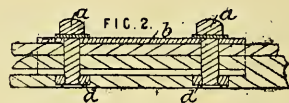
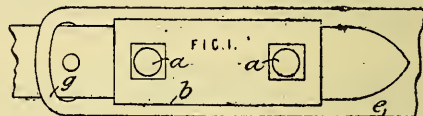
an improved method of applying pressure thereto. Fig. 3 shows a transverse section of one form of apparatus in which the pressure is adjusted in the manner described in Specification No. 2805, A.D. 1892. The bearing consists of two rollers *I, I'*, which may be cylindrical or conical, mounted in the cutter lever *C*, and bearing upon a washer *K* formed in one piece with a sleeve *k* fitting the pivot pin *D*. The sleeve is notched at its lower end to engage with a projection *d* so that the washer may be turned to bring a fresh bearing surface against the rollers and be locked in that position. The washer *K* is held in place on the pin *D* by a nut *L*. The ring *C'* serves as a dust cap and as a support for the ends of the roller pivots. Fig. 5 shows in longitudinal section the method of adjusting the pressure. The pivot pin *D* is hinged at *E* to the casing, and carries a screw nut *L* at its upper end as shown. The nut may be locked in position by a spring catch *o*. The oscillating lever *C* is supported at the rear by the roller *c* running on the casing *F*.

20,564. Rothrock, L. W. Nov. 14.

Yokes, neck; fastening breast straps &c. Relates to a fastening chiefly designed for securing the breast straps to the neck yoke, but applicable also for other purposes. The attachment consists of a ring *A* formed with arms *a, a* which embrace a bar upon which turns a roller *B*. The bar is removably secured by a bolt *b*. When used for a neck yoke *D*, the attachment is secured by a staple *d* on the ferrule *D'*, and the breast strap is passed round the roller *B*.

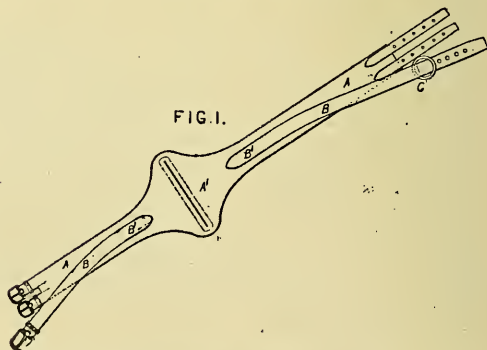


20,599. Broughton, J., and Broughton, F. T.,
[trading as John Broughton & Sons].
Nov. 14.



Fastening traces &c., couplings for. The invention is shown as applied to a trace, but is applicable to straps generally. The tug is put through the loop *g* in the trace, and passed under the guide-piece *b* and secured by pins *a*. The pins *a* screw into nuts *d* or are otherwise secured. In a modification, the pins are connected with the plate forming the guide-piece, but can move to a certain extent in longitudinal slots to allow for possible displacement of the holes in the tongue by shrinking &c.

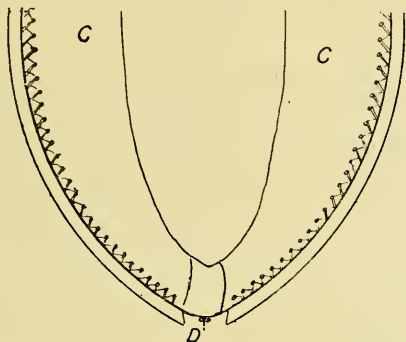
20,663. Terront, C. May 18, [date claimed under Sec. 103 of Patents &c. Act, A.D. 1883].



Saddles, girths for. Relates to belts for gymnasts, cyclists, and the like, applicable also as girths for

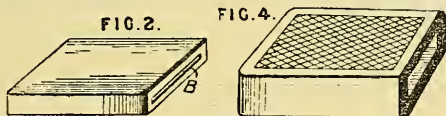
animals. A belt A with a broad part A¹ at the back is provided with supplementary straps B, B¹. A link, hook, or the like C may be attached to a swivel hook on some part of a cycle so that the rider may obtain a better purchase on the same.

20,837. Scrutton, C. Nov. 17.



Collars, neck.—The usual straw stuffing is replaced by an inflated pad, which is provided with a suitable valve D, and is kept in place by lacing or stitching a leather covering C over it.

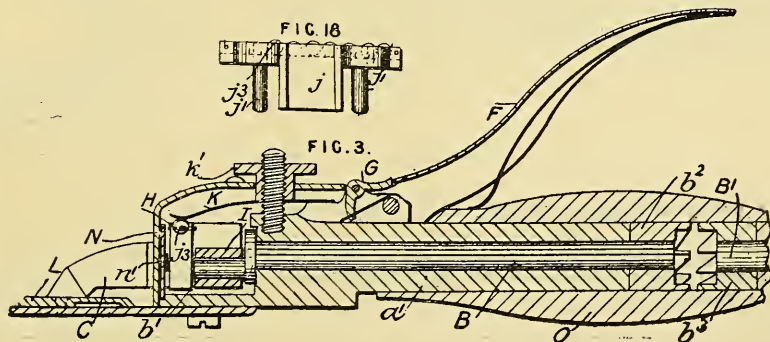
21,255. Bringham, F. J. Nov. 22.



Fastening, loops for straps for. Separate loops or loops on the ends of straps for saddles, bridles, &c. are made by first splitting the leather, as shown at B, Fig. 2, and then wedging or otherwise forcing it open till it has the required form, as shown by Fig. 4.

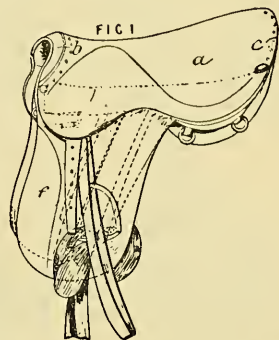
21,710. Bland, H. Nov. 28.

Horse clippers and the like.—Relates to sheep-shearing machines. The machine is worked by a spindle B carrying a ratchet-wheel b², which is thrown into gear with the constantly-rotating ratchet-wheel b³ by the lever handle F pivoted to the casing of the machine, and engaging with pins carried by the outer sliding part O of the handle. The catch G, when depressed, enables the lever F to be turned so far back that the main part of the machine with the spindle a¹ may be drawn apart from the

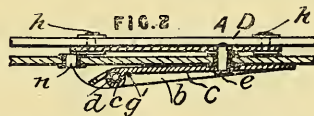


21,567. Jenkinson, W., Squier, J. W., and Jenkinson, G. E. Nov. 25.

Saddles.—The seat a is fastened to the head-piece b and cantle piece c, which are drawn over the edge and secured to the underside of the saddle-tree. The seat is further supported by webbing extending between the pieces b and c. The side panels are fixed directly to the tree, are preferably made deeper, and are preferably lined with leather and quilted. The centre of the tree is left open for ventilation. The flaps f are formed with hollow blocks in which no padding is used.



21,570. Aylsworth, G. M. Nov. 25.

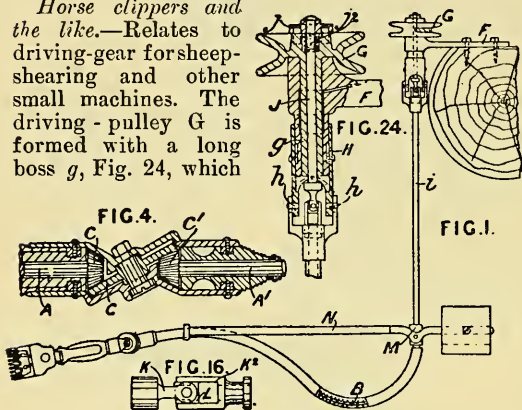


Fastening straps, buckle attachments for. Fig. 2 shows a section of the buckle, in which A is a frame plate secured to the strap D by rivets h. The plate A is bent up at the sides to form wings b. The wings are perforated to receive a pintle c upon which the lever plate C is hinged. g¹ is the loop of a controlling-spring which holds the plate C in its closed position. A pin e is secured to the plate C, and engages when closed in an aligning-hole in the plate A. The strap D is provided with eyeleted holes through which the pin e passes when the strap is secured in any position.

handle O carrying the live spindle B'. The front end of the spindle B carries a crank-pin b^1 which fits into a square block I working in a bridge-piece shown in elevation in Fig. 18. The bridge-piece has a slot j for the block I and two pins j^1 engaging with the two parallel levers C by which the cutter L is worked. The bridge-piece presses upon the levers, and is itself pressed down by a spring K which bears upon the antifriction balls j^3 of the bridge-piece, and is capable of adjustment by the nut k^1 . Dust is kept out of the interior parts of the machine by a plate N which reciprocates along with the levers C, and is pressed against the fixed casing H by the spring n^1 . The teeth of the cutter are so spaced with regard to the teeth of the comb that they do not all cut simultaneously.

21,712. Bland, H. Nov. 28.

Horse clippers and the like.—Relates to driving-gear for sheep-shearing and other small machines. The driving-pulley G is formed with a long boss g , Fig. 24, which

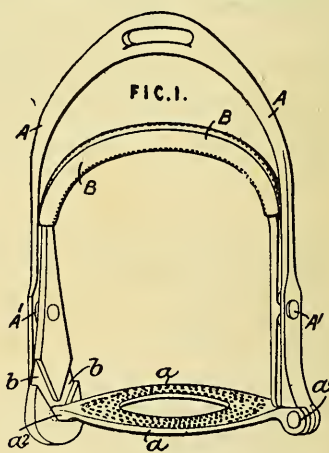


runs in a bearing bracket F; it is coupled to the

cap j of the spindle J by means of studs entering recesses therein; the spindle may be uncoupled by lifting it, the spring j^2 facilitating this operation. The projecting end of the bearing is fitted with a sleeve H provided with studs h, h upon which the forked upper end of the shaft casing i may be hung. The spindle J is coupled to the shaft i by a universal coupling, Fig. 16, consisting of two forks K, K^2 pivoted to a central block L; the lower fork is formed with projecting studs which engage in slots in the block. A similar joint M couples the shaft i to the flexible shaft B, and is arranged to support a weighted lever N for balancing the tool or machine at the other end of the flexible shaft. The rigid section A^1 , Fig. 4, at the end of the flexible shaft is coupled to the tool spindle A by means of pinions c, c^1 and a double-faced wheel C mounted on a pin, which also serves to connect the two halves of the casing together, and on which they may be turned to any angle. The flexible shaft consists of a gut or other suitable core bound with fine wire.

21,778. Carter, J. Nov. 29.

Stirrups.—The tread a of a safety stirrup is hinged at one end a^1 to the outer bow A, and is supported at its other end a^2 in the groove b in the inner bow B, which is pivoted to the outer bow at A^1, A^1 . In the case of an accident the inner bow B turns on its pivots A^1, A^1 and liberates the end a^2 of the tread from the groove b , thus allowing the tread to open out and free the rider's foot.

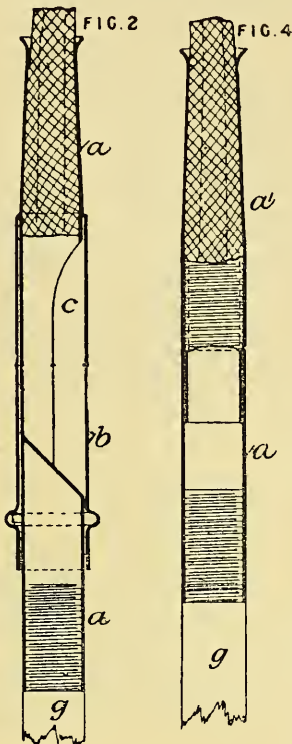


21,900. Cannon, T. M. Nov. 30. Drawings to Specification.

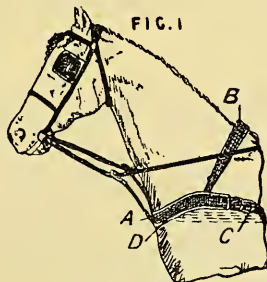
Whips.—Handles for whips are made from corn cobs. The cobs are first dried, then soaked in lime water or other material to fill up the interstices, again dried, and finally turned in a lathe or otherwise shaped

22,114. Middleton, J. W. Dec. 2.

Whips.—Relates to the invention described in Specification No. 15,011, A.D. 1890, for securing whip lashes or thongs. The Figures show sections of two forms of joint. In Fig. 2 the taper thong is placed in position by passing it through a lateral opening *c* in the taper socket *a* fixed to the stock *g*. This socket is then strengthened by sliding over it an outer sleeve *b*, which is secured in place by a bayonet joint, as shown, or by screwing &c. In Fig. 4 the socket is in two parts, one of which *a* is permanently fixed to the stock *g*, and the other part *a'* is secured to the part *a* by screwing, as shown, or by a bayonet joint &c.

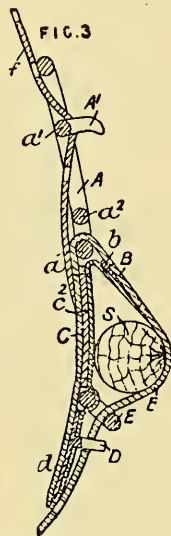
**22,371. Cain, C. T.** Dec. 6.

Collars, breast.—The collar is stiffened at the sides *D*, but not in the front *A*, by peculiarly-shaped spring metal plates. The neck strap *B* and traces *C* are attached as shown. By this means the strain is thrown upon the animal's shoulder in a better manner.

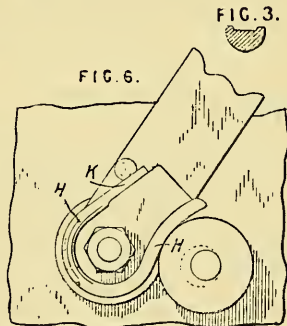
**22,829. Litoux, V. M. E.** Dec. 12.

Tugs, shaft; fastening.—The shaft-tug consists of a strap *B, C* suspended from the cross-bar *a* of the buckle *A* to which the backband *f* is secured. The two parts *B, C* of the lower strap are

connected together by the loop *E* and curved pin *D* fixed between the two thicknesses of the part *C*. Short pieces of leather *b, c'* are also secured between these two thicknesses. The strap *B* is buckled below to the bellyband, the pin *D* preventing the tightening of the strap from affecting the pressure upon the shaft *S*. The ring *E* may be hinged to the base-plate *d* of the pin *D*. The base-plate may be extended upwardly and form part of or be hinged to the frame of the buckle. The buckle *A* for shaft-tugs or other parts of harness consists of a frame with cross-bars *a, a', a''* and a fixed tongue *A'* instead of a hinged tongue.

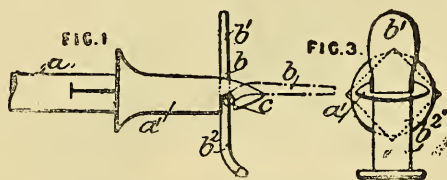
**22,849. Lake, H. H., [Kelley, H. E.]** Dec. 12.

Fastening, hooks for. Sheet-metal hooks such as harness check-hooks are made by first cutting out a straight blank, then stamping it to give it the section shown in Fig. 3, and lastly bending it to hook form as shown at *H*, Fig. 6. The hole at the end *K*, Fig. 6, for the fixing-screw may be made at the cutting-out or the stamping operation. The blanks may be cut out from a plate or strip, so that their wide ends *K* lie alternately in opposite edges of the plate. Hooks of brass, aluminium, &c. are polished before being bent, and steel hooks are lacquered or nickel-plated after the bending process.

**22,851. Vacherat, G.** Dec. 12.

Fastening traces. The trace is put on the end *a'* of the bolt *a* when the lever *b* is in the position shown in dotted lines, and is secured by raising the lever and then allowing it to fall into the position shown in full lines. The lower end of the lever has a T-shaped head *b'*, and the upper

end b' is enlarged to prevent it from passing completely through the slot in which it works. A

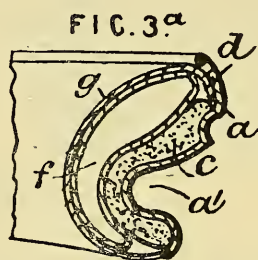


recess is made at c , and a groove on the upper side of the end of the bolt to allow the lever to be moved into the horizontal position.

23,032. Hughes, F. Dec. 14.

Collars, neck.—

Fig. 3^a shows a transverse section of one limb of the collar. The fore-wale and after-wale a are made of metal, preferably steel, hollowed at a' for the hames. The hames may, however, be dispensed with, when suitable rings &c. are secured to the shell a . A bag c of ground cork is placed behind this metal shell a and stitched to a canvas lining d , and behind this

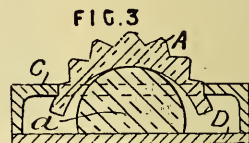


are secured to the shell a . A bag c of ground cork is placed behind this metal shell a and stitched to a canvas lining d , and behind this

again is placed an inflated rubber bag f held in place by a casing g of leather &c. A covering of patent leather may be fixed outside the metal shell a . The air bag may be dispensed with, or several bags may be used.

23,038. Scott, J. Dec. 14.

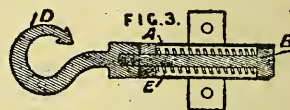
Stirrups.—The object is to provide the tread of a stirrup with a readily-replaceable pad to prevent the foot from slipping. Fig. 3 shows the cross-section of a



tread D upon which a rubber pad A with cork base a is retained by a movable plate or frame C . The plate C may be hinged and fastened to the tread or to the legs of the bow in various ways.

23,060. Boyes, W. Dec. 15.

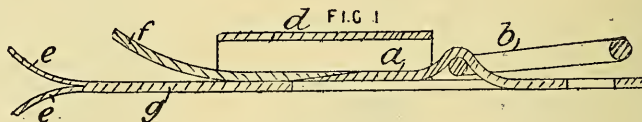
Fastening traces, hooks for. Relates to a spring trace hook. The hook proper D is attached to a bolt B , between the head



of which and the end of the tube A is the spring E . The tube A may be attached by bolts to the vehicle.

23,551. Broughton, J., and Broughton, P. T., [trading as John Broughton & Sons]. Dec. 21.

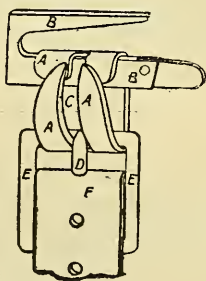
Fastening, buckle attachments for. Relates to the method of fastening the buckle b to the tug or strap g attached to the hame by splicing its end e or otherwise. A tongue a is cut in the tug, and after it has been passed over the end bar of the buckle is sewn or otherwise secured to the body of the strap; d is the casing or envelope through which the securing-strap passes after leaving the buckle, and f is a strap for grasping when pulling the strap passing through the buckle and guide.



through which the securing-strap passes after leaving the buckle, and f is a strap for grasping when pulling the strap passing through the buckle and guide.

23,605. Angove, E. S., and Clarke, T. U. Dec. 22.

Stirrup straps, suspending, safety saddle-bars for. The stirrup strap F is connected to the saddle-bar B by the metal hook A slotted at C for

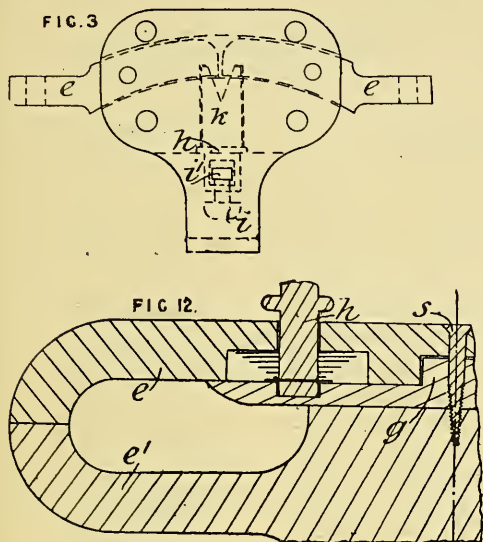


the tongue D of the buckle E . An upward pull on the stirrup strap disengages the buckle from the hook, and a backward pull disengages the hook from the saddle-bar.

23,623. Barnsby, J. N. Dec. 22. Drawings to Specification.

Saddles.—Relates to saddle-trees. The gullet or the cantle, or the whole tree, is formed of steel of trough or L-section.

23,667. Wood, A. Dec. 22.

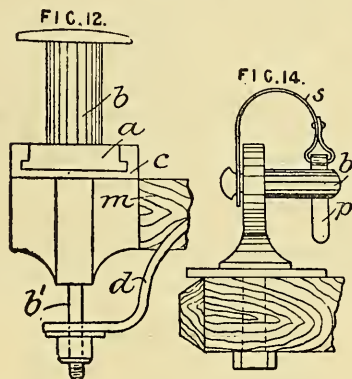


Fastening pole-chains, slipping-devices &c. for. Fig. 3 shows an end view of the pole head carrying an attachment for securing the pole-chains, and Fig. 12 shows a partial horizontal section through the pole head carrying a different form of attachment. In the form shown in Fig. 3, each chain is attached to a pin *e* held in place by a sliding bolt *k* which is freed so as to be able to move downwards by a cord fastened to the button *i* on a spring bolt *i'* attached like the bolt *k* to a plate spring *h*. The pin *e* may also be kept in place by a screw, or by a spring bolt, or by a pin arranged to be turned on its own axis till a reduced part of it allows the slotted end of the pin *e* to be drawn away from it. In Fig. 12 the pole-chain is held in place by the parts *e, e'* which, together, form an eye at each end. The part *e* may be turned on its pivot *s, g* when the spring bolt *h* is raised.

23,668. Wood, A. Dec. 22.

Runaway horses, releasing; fastening traces, draw-bolts &c. for. The fastenings are for securing traces to the splinter-bars, shafts, &c. of dog-carts, carriages, and other vehicles in such a way that runaway or fallen horses may be readily released. Figs. 12 and 14 show two forms of fastenings. In the form shown in Fig. 12, the trace is secured to the pin *b*, the base *a* of which slides in the head *c* of the splinter-bar *m*. The pin *b* is released by drawing the spring bolt *b'* which passes through the head and base *a*. The bolt *b'* is drawn by a rod *d* actuated by a strap passing to the driver. In modifications, the base *a* is kept in place either by a vertically-sliding plate, itself held in position by a spring bolt, or by a flat-sided pin which rotates on its own axis in a

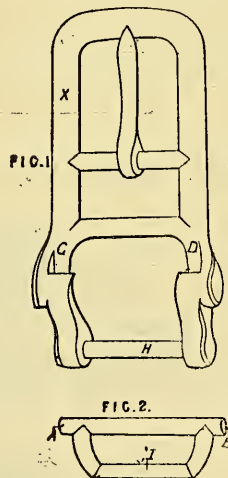
keyhole slot in the base-plate *a*. In the form shown in Fig. 14, the trace is kept on the bolt *b*



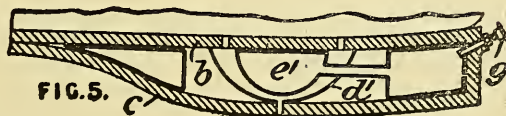
by the split pin *p* attached to the strap *s*. This form may also be modified.

23,753. Demontais, A., and Odin, M. Dec. 23.

Tugs, shaft; fastening, buckle attachments for. The shaft-tug consists of a leather loop, one end of which is fixed to the bar *H* of the buckle *X* and the other end to the bar *A, B* of the loop, Fig. 2. The projecting ends of the bar *A, B* fit into grooves or sockets *C, D* in the buckle *X*, and the bar *I*, Fig. 2, is secured to the bellyband. The bar *H* may be provided with a metal bush to fit the leather loop above mentioned.



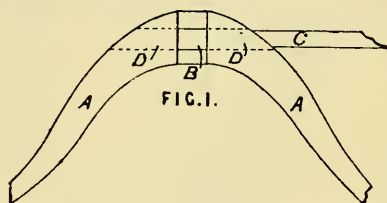
24,007. Wood, F. Dec. 29.



Saddles; ventilation.—Air cushions are used in soles and heels of boots and overshoes, saddles for

horses, and ordinary seats, and may be adapted to produce ventilation. In Fig. 5, the upper and lower parts *b, c* of a sole enclose central and surrounding cushions *e'*, which are inflated by a nozzle *g*. The central cushion is surrounded by a receptacle *d'* with openings through the parts *b, c*, the cushion serving as a valve to close the lower hole when the receptacle *d'* is compressed, air being thus discharged through the upper holes. In other forms, the ventilator is dispensed with, and the cushion may be a simple bag occupying the whole space between the parts *b, c*, or may consist of a number of tubes of semicircular section, connected together by a surrounding tube. The protecting-covering *c* may be dispensed with.

24,043. Wheeler, H. B. Dec. 30.



Saddles.—The shape of the saddle can be varied

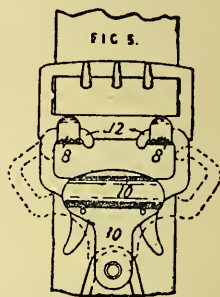
by a screw *C* which regulates the distance between the two plates *A, A*. These plates are fixed to the



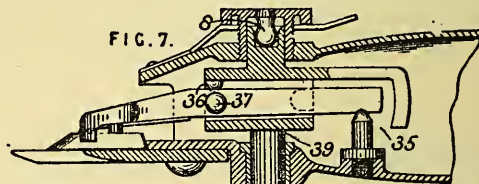
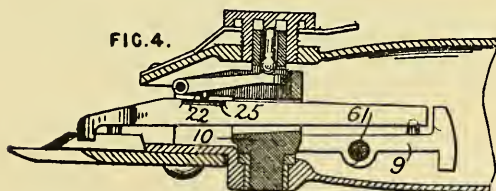
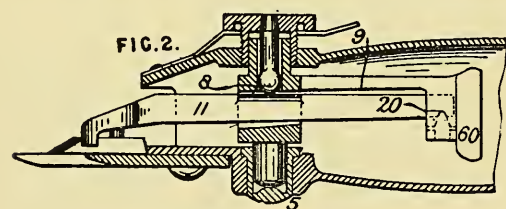
tree, and are guided by bars *B* sliding in slots *D* in the plates.

24,063. Dallimore, W. H. Dec. 30

Fastening, buckle attachments for. Relates to a spring hook arrangement for securing buckles to braces, harness, &c. The buckle is provided with turned-up plates 8 or a turned-up slotted plate to act as catches for the hooks. Two hook arms 12 are pivoted in a frame 10, and are connected by a spring to hold them together. Fig. 5 shows the arrangement as a brace attachment.



24,092. Silver, W., Cohen, N., and Marks, B. F. Dec. 30.

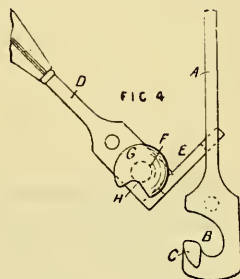


Horse clippers and the like.—Relates to improvements in the power and tension levers, the tension mechanism, and the bearings and settings of the vibrating parts of machines for shearing and dipping wool and cutting hair. The Figures show vertical sections of three of the twelve forms described in the Specification. In all the forms but one, the tension lever may be drawn out of the machine for cleaning purposes, without further taking the machine to pieces, and in two forms the tension is adjusted by drawing up the hinged comb plate by means of a bolt and nut. In Fig. 2 the tension lever 11 is shown pivoted to the power lever 9 at 20, the tension being applied by a pin 8 connected to the screw cap shown. The part 60 is for the crank of the rotating shaft to work in. The pin 8 may be separate, the bearing 5 may be altered in form, and the lever 9 may extend below or on both sides of the lever 11 and be furnished with clips to embrace the lever 11. In Fig. 4 the pressure

is applied at 25 by a lever 22, and the lever 9 is oscillated by a forked piece, pivoted to it at 61, and fitting at its other end into an eccentric socket in a disc arranged on the end of the driving-shaft. In another form, the tension lever itself is oscillated by the forked piece, and pressure is applied by a tubular piece sliding vertically upon the pin 10 suitably modified. In Fig. 7 the tension lever is supported on the pin 35, and pressure is applied by a screw cap with a pin 8. The spherical parts 36, 37 lessen the friction. Instead of adjusting the tension by a screw cap, the screw 35 may be used for this purpose. In other forms, the centre of the tension lever is cylindrical and turns freely in the pivot pin 39, Fig. 7. In other forms, the end of the lever screws into a plug arranged with its axis at right angles to the axis of the pin 39. In this form, the pressure is applied by a lever similar to that shown at 22, Fig. 4.

24,126. Bowdler, W. Dec. 31.

Stirrups.—Fig. 4 shows the inner bow D and tread E of a safety stirrup just after disengagement due to a fall of the rider. The inner bow D carries a stud F with a notched head G, and the outer bow A is slotted at B to receive the stud and formed with a projection C to engage with the notch H.

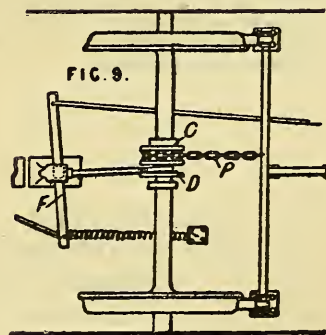


APPENDIX.

A.D. 1890.

20,756. Browne, A. H. S., and Sullivan, T. Dec. 19.

Stopping and controlling runaway and restive horses; rein holders.—The reins may be attached to a rope wound on a drum, such as C, fitted with the clutch D. When the driver leaves his seat, the clutch is automatically thrown into gear, and if the horses move away the rope becomes wound up and pulls in the reins at the same time that it applies the brakes.

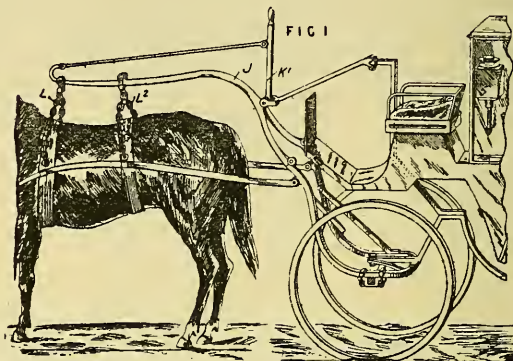


A.D. 1892.

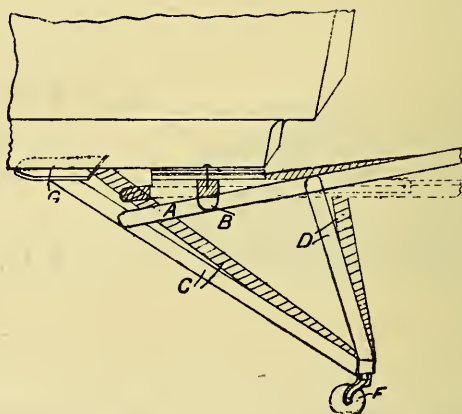
21,942. Schaefer, A. J. Nov. 30.

Preventing horses from falling ; stopping and controlling runaway or restive horses.

—In the case of a four-wheeled cab or like vehicle, a hinged frame of special construction is made to project from the fore-carriage above the horse as at J, the harness being connected thereto by chains L, L², so that the horse is supported thereby, and prevented from falling. The frame and the fore-part of the horse can be raised off the ground by the driver by means of a hand-lever K¹, the driver being thus enabled to stop a runaway horse. In the case of a two-wheeled vehicle, such as a dogcart, legs with rollers at their lower ends project downwards from the front of the vehicle to prevent the horse from falling, and the shafts are each made in two parts hinged together, the front parts being raised by the driver by means of a lever, such as K¹, to hold up the fore-part of the horse.

**23,761. Berkley, C. Dec. 23.**

Preventing horses from falling.—For omnibuses and two-horse vehicles, a lever A attached at its front end by chains to the harness, is pivoted on a leg D carrying at its lower end a roller F, and the rear end of the lever is jointed to the undercarriage of the vehicle at B and also to a strut C, the lower end of which is attached to the leg whilst its upper end is attached to a plate G bearing on the bottom of the vehicle. When the horse stumbles it is prevented from falling as its weight is balanced by that of the vehicle. For carts, cabs, &c. fitted with two shafts, each shaft is supported by a leg at its centre, and the horse is supported by chains from the belly-band, which are attached to an arched frame mounted on the shafts.



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CHANCERY LANE, LONDON, W.C.

PATENTS FOR INVENTIONS.

ABRIDGMENTS OF SPECIFICATIONS.

CLASS 62,
HARNESS AND SADDLERY.

PERIOD—A.D. 1893–96.



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EXPLANATORY NOTE.

The contents of this Abridgment Class may be seen from its Subject-matter Index. For further information as to the classification of the subject-matter of inventions, reference should be made to the *Abridgment-Class and Index Key*, published at the Patent Office, 25, Southampton Buildings, Chancery Lane, W.C., price 1s., postage 5d.

It should be borne in mind that the abridgments are merely intended to serve as guides to the Specifications, which must themselves be consulted for the details of any particular invention. Printed Specifications, price 8d., may be purchased at the Patent Office, or ordered by post on the Patents Form C¹ (to be obtained from any Post Office), no additional charge being made for postage.

SUBJECT-MATTER INDEX.

Abridgments are printed in the chronological order of the Specifications to which they refer, and this index quotes only the year and number of each Specification.

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" H. J.'94. 14,703

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" D.'93. 16,599

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" W. H.'95. 9884

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" G. F.'95. 67

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" H. R. Newburgh-

'93. 5321. '96. 18,728

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" W. S.'93. 15,321

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" J.'96. 5324

Weightman, A.'96. 4740

" W. F.'96. 4740

Welsh, J.'96. 6399

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" D.'95. 6524

" H.'93. 15,953

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" J. J.'94. 8092

" R.'95. 1775

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" 16,669.

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Windle, Blyth, & Co., Brace.

" '94. 9175

Withers, S.'93. 10,986

" '94. 1923

" T. G.'93. 10,986

" '94. 1923

Wolseley Sheep Shearing Ma-

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" '94. 4258. 19,093. 22,016

" '96. 7980.

" F. H.'94. 22,708

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Woods, H. B.'95. 2841

Wright, T.'94. 24,512

Wulff, E.'95. 20,317

Wyatt, G. P.'93. 24,159

Zerjal, A.'95. 19,134

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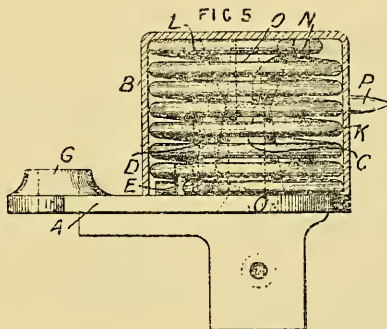
HARNESS AND SADDLERY.

Patents have been granted in all cases, unless otherwise stated. Drawings accompany the Specification where the abridgment is illustrated and also where the words *Drawings to Specification* follow the date. The price of each Specification is 8d. including postage.

A.D. 1893.

115. Boulton, A. J., [*Wheat, J. J.*]. Jan. 3.

Fastening traces. The device is for lessening the jerks and strains due to the rigid attachment of the traces to the cross-bar or thills. The Figure shows an elevation, partly in section, of the spring device, which consists of a base plate A for attachment to the vehicle, a cap B carrying the cockeye P for attachment to the trace, and a spring K the hooked ends of which engage with pins E, N on the base plate and cap respectively. The cap is held to the base plate by a bolt O passing through sleeves L, C, and the spring is kept normally under a slight strain by means of lugs on the base plate and cap respectively; one of these is shown at D. An external pin on the cap engaging with a pin on the base plate may replace these lugs. The forward movement of the cap may be limited by a similar pin or by the engagement of the cockeye with a bolt through the boss G.

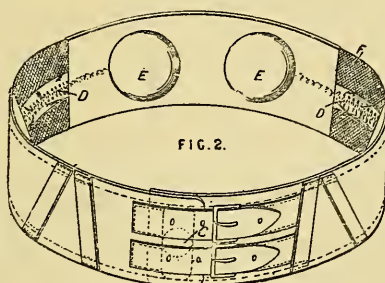


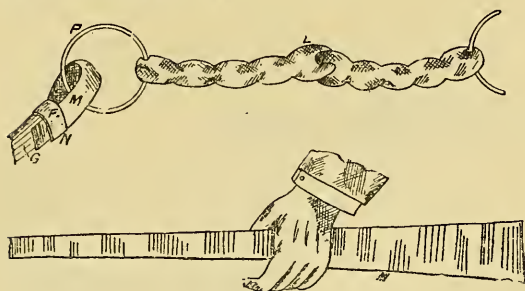
195. Peake, M. A. Jan. 4.

Crib-biting, preventing.—The woodwork of the manger or other stable fitting is covered with a woollen mat or cover which has been soaked in a solution of aloes, and sprinkled with cayenne pepper and gum arabic.

222. Mitchell, N. Jan. 4.

Belly bands and girths, electropathic, are formed with Pulvermacher or other chains let into parts. The chains are connected by means of wires D twisted helically, or otherwise arranged to pass through the elastic portions F. E, E are the usual terminal knobs, and C are overlapping front connections.

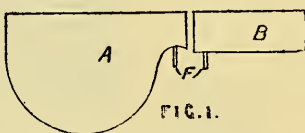


409. Armstrong, C. Jan. 9.

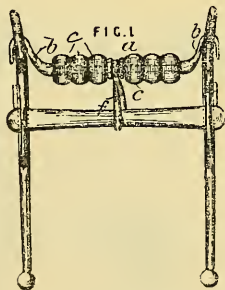
Bits and bridles.—The part of the bit which comes into contact with the mouth has an undulating outline L, either throughout its whole length or in part only. This improvement may be applied to Segundo and Bentinck bits. The bit rings P are attached to the bridle and to the reins G by a running noose, as shown. The loop F is sewn to the end of the rein and passes freely over the other part. The reins are cut to a wedge-shape, as shown at M, and the throat straps of bridles are dispensed with.

436. Latta, R. Jan. 9.

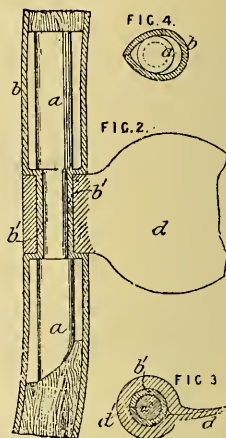
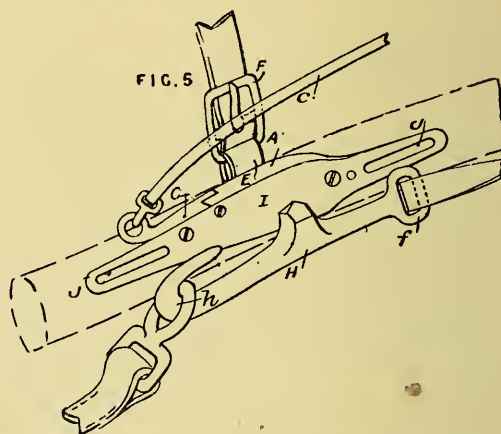
Saddles are stuffed with two or more air inflated bags or pads made of stout twill, india-rubber, or other air tight material. Fig. 1 shows two bags A, B arranged under one side of a saddle between the panel and lining. Or the bags may be inserted in slits formed in the lining. Each bag is provided with a tube F for inflating same.

**549. Swales, F. Jan. 10.**

Bits.—The object is to prevent a horse from getting the bar between his teeth, or to compel a horse to immediately free the bar when so held. A separate mouth-piece is employed, consisting of a bar *a* bent and curved at its ends *b* to act as wedges, and provided with balls *c* of rubber or metal &c. This mouthpiece may be used separately as a snaffle, or may be combined as a bridoon with a Liverpool bit, as shown, or with other bits. When combined with a second bit, a suitable connection *f* is provided; and when used separately the hooks *b* are replaced by rings.

**578. Charlesworth, A. Jan. 11.**

Hames.—A bar *a*, with a reduced part at the centre, is inserted in the tube or case *b*, which is then swaged down to fit the same, forming a neck *b'* for the reception of a metal socket *d'* formed on or connected to the hame-plate or hook.

**700. Lefebvre, T. L. Jan. 12.**

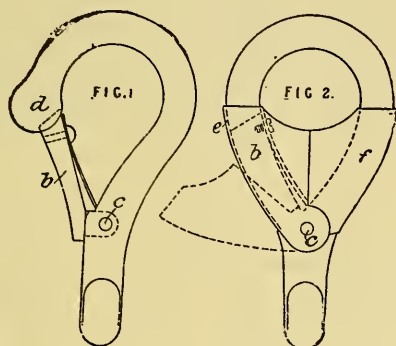
Fastening back bands and traces to the shafts of road vehicles. The back band is connected to a buckle F carried by a loop E formed in a piece with the bar H, which has a hook *h* and loop *f* for parts of the trace. The combined parts E, H are secured to the shaft (shown in dotted lines) by a spring bolt enclosed in the case A and operated by a lever C with cord *c*. The case A is convex to correspond with the shaft, to which it is fixed by screws passing through the slots J, J in the cover plate I.

838. Bird, G. C. Jan. 13.

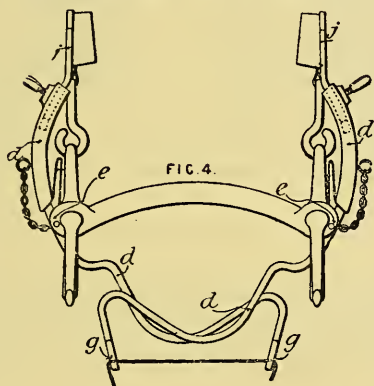
Fastening.—Snap hooks for bridle bits, rack chains, pillar reins, &c. The free point of the tongue *b* is protected by the overlapping end *d*, Fig. 1, of the body of the hook or by a shield *e*, Fig. 2, pivoted at *c*. A second shield *f* is fitted to the other limb of the hook as shown.

(For Drawings see next page.)

838.

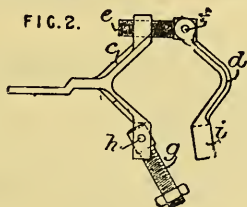


1145. Monsallier, J. J. Jan. 18.



Stopping runaway horses.—The nostrils of the animal are closed by pads *j* adjustably secured to levers *d*, pivoted at *e* to the cheeks of the bit and bent below as shown, so as to be operated simultaneously by a strap through the eyes *g*.

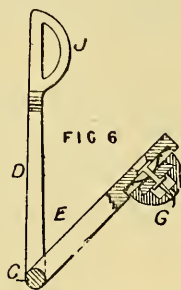
1395. Schilling, O. Jan. 23.



Whip sockets or holders for attachment to various articles are constructed with two V-pieces *c*, *d* connected by a screw *e* pivoted at *f* and by a screw *g* pivoted at *h* and engaging a slot in the end *i* of the clamp *d*.

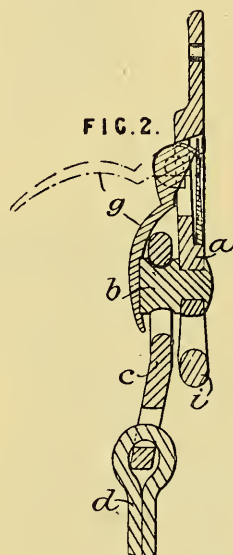
1469. Culpin, A. Jan. 23.

Bits.—The mouthbar is grooved longitudinally on the top to receive a removable rod *C*, carrying at each end a lever *D* and in the middle a plate *E*, provided with a projection or a pricker *G* with a spring shield. Extra reins are attached to the loops *J* so that when they are pulled the tongue is acted upon to restrain the animal. The plate *E* may be moved more rapidly by using toothed gearing.



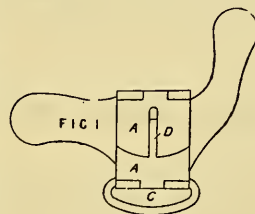
1783. Hewitt, J. Jan. 26.

Stirrup-straps, suspending.—The loop *c* carrying the stirrup strap *d* is supported by the stud *b* projecting from the base plate *a* fixed to the saddle-tree. The loop *c* is kept on the stud *b* under ordinary conditions by a spring cap *g*. The front of the stud is bevelled so that a strong rearward pull disengages the stirrup strap. An upward pull also disengages the strap by the lifting of the spring cap *g*. Should the cap or other part become injured the loop *c* may be attached to the hook *i*.



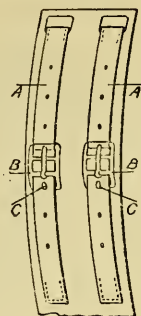
1866. Malet, H. S. Jan. 27.

Stirrup - straps, suspending.—The fastening consists of a plate having top and bottom folding plates *A*. The top plate is held down by a spring and is slotted at *D*. The stirrup leather carries a ring *C* which is held by the plates *A*, and is attached to the rider by a string which passes through the slot *D*.

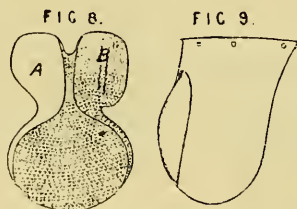


2144. Wilton, H. S. Jan. 31.

Saddle-girths.—The buckles B are formed with hooks C so that they may be adjusted upon the straps A, A secured at both ends to one end of the girth.



2310. Leckie, W. G., and Leckie, J. A. Feb. 2.



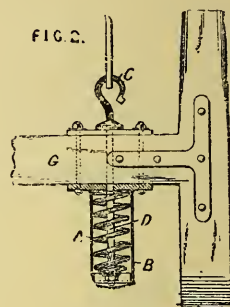
Pattern saddles.—The object is to obviate the

necessity for a commercial traveller to carry with him a separate pattern for every variety of saddle that he wishes to exhibit. The flaps, Fig. 9, are detachably connected to the saddle top, Fig. 8, the two sides of which may be differently formed, as shown at A, B. Thus by interchanging several detached flaps and saddle tops a large variety of patterns may be exhibited.

2594. Giles, F. Feb. 6.

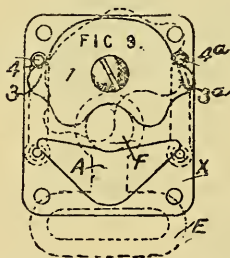
Fastening traces.

The trace hooks C are formed with extensions, such as D, fitted with helical springs, such as A, enclosed in cylinders B, so that the hook yields to the pull of the draught animal. The spring hooks may be fitted to the cross-bar G connecting the shafts or to the shafts themselves, or if whipple-trees are used they may be attached to the vehicle by similar spring devices.



2861. Biebuyek, G. Feb. 9. [Date claimed under SEC. 103 of PATENTS &c. ACT, 1883, July 16th, 1892.]

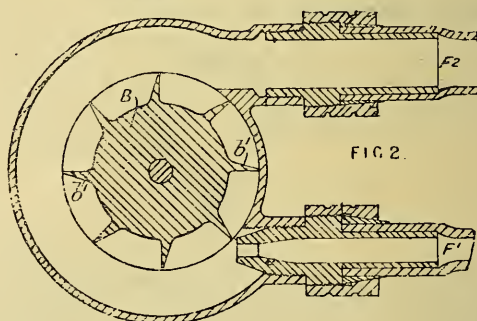
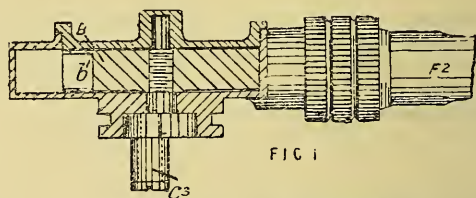
Stirrup-straps, suspending.—Improvements on the invention described in Specification No. 18,194, A.D. 1889. As in the former Specification, the stirrup strap is attached to a loop E supported by its pin F upon the curved piece A carried by a plate X fixed to the saddle-tree. The pin F, however, is normally kept in place by a centrally pivoted plate 1 of the shape shown. When the stirrup strap is pulled in an abnormal manner this plate rotates, forcing back the spring pin 4 or 4^a by one of its horns 3 or 3^a, thus freeing the pin F with the loop E.



2881. Nelson, W., and Niven, J. J. Feb. 9.

Horse &c. clippers.—Relates to a water, air, or other fluid motor combined with a horse-clipper or like apparatus. Figs. 1 and 2 show a sectional elevation and plan respectively of the motor. The water &c. is forced through the tube F¹ and sucked through the tube F² or, in the case of compressed

air, simply allowed to escape through the tube F². In its passage from one tube to the other the fluid impinges against the vanes b¹ of the disc B and causes it to rotate, thus driving the crank C³

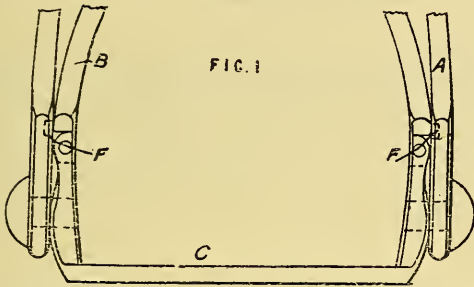


which engages with a slot in the cutter lever and effects its rapid oscillation. The motor may be used to drive the flexible shaft of clippers of the Wolseley type.

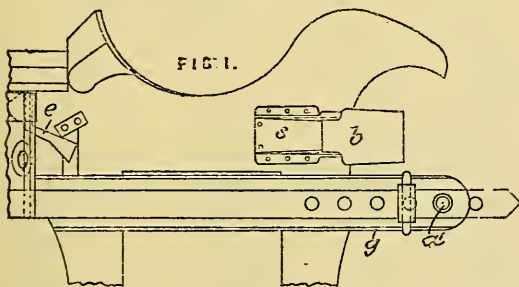
2969. Ricketts, A. Feb. 10.

Fastening.—Fig. 2 shows a side view of the slip hook for connecting the pole chains to the hames. The hook consists of a back part *b*, provided at one end with a shackle *a* and at the other with a stud *h*, and of a front part *f*, which turns on a central pivot (not shown) and is held normally over the stud *h* by a spiral spring contained in the hollow part *c*.

FIG. 2.

**3047. Scott, J.** Feb. 11.

Stirrups.—Improvements on the invention described in Specification No. 1765, A.D. 1885. The inner bow *B* carrying the tread *C* is arranged to pivot in both directions upon the outer bow instead of in one direction only. It is therefore immaterial in which way the stirrup is hung. The inner bow is prevented from turning too readily by pins *F* fitting into sockets in the outer bow *A*.

3097. Martin, J. M. Feb. 11.

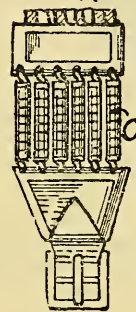
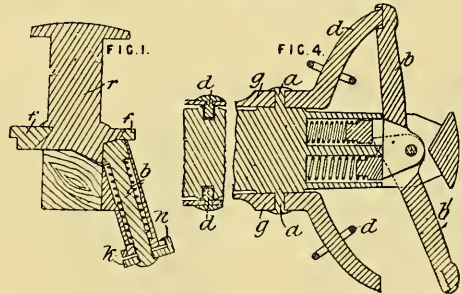
Saddles, ladies'. The object is to enable the rider to raise the off-side flap and to adjust the girth and stirrup leather without dismounting. The flap is held down by a spring which may be overcome by using sufficient force. The Figure shows a plan of the front portion of a saddle-tree in which the flap is held down by a spring *s* acting on a hinged blade *b* fitting into a pocket in the flap. The spring *s* may be replaced by a spring

bolt. The stirrup leather is fastened at one end to the piece *e*, is then threaded through the stirrup, and after passing along the channel or guide *g* is secured by a stud &c. *a'*.

3359. Refardt, G., and Meyer, C. Feb. 15

Saddle-girths.—The girth is made elastic by the introduction of spiral springs *C* near its ends. Interlocking rods within these springs prevent overstretching.

FIG. 1

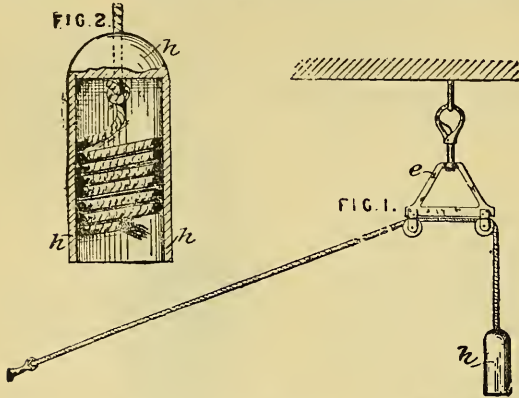
**3411. Wood, A.** Feb. 15.

Fastening traces and pole chains. The object is to release runaway and fallen horses. Fig. 1 shows a section of the roller bolt of a splinter or draw bar and Fig. 4 a section of the pole head fastening. In Fig. 1 the roller bolt *r* for the trace is secured to the base *f* by a spring bolt *b* which is held in place by a swivelling cap *k* with hook *n*. The spring bolt may be operated by a lever within reach of the driver, as described in Specification No. 23,668, A.D. 1892. The spring bolt may be replaced by a pivoted latch to be worked by hand. In Fig. 4 the pole chains *d* are released automatically, when the traces are freed, by the pivoted spring arms *b*, *b'*. The pole chains may also be released by hand by turning the arms *g* upon their pivots *a* after the pins *d* have been removed from their sockets. The arms *b*, *b'* may be rigidly fixed to the pole head.

3459. McKenzie, D. W. Feb. 16.

Horse breaking and training.—Relates to an improved stall tie stated to be useful in the initial

stages of the breaking-in of young horses, which are attached to it for several hours daily. The halter rope is passed through pulleys on an overhead

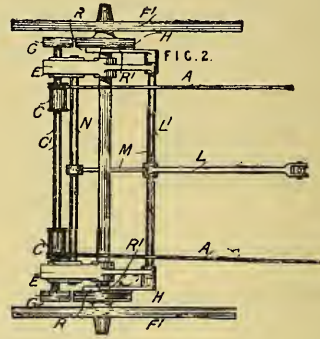


swivelling frame *e* and carries a hollow tension weight *h*, of wood or metal, in which the excess of rope may be coiled.

3816. George, W. Feb. 21.

Stopping runaway horses.—The animal is controlled by extra reins *A, A* which are attached to

mechanism beneath the cart &c. The reins are wound upon drums *C, C* on the spindle *C'* carrying the friction wheels *G*, which may be put into gear with other wheels *H* fixed to the road wheels *F'*.

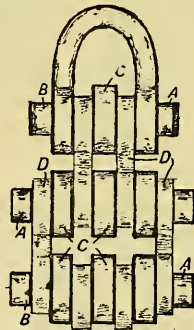


The wheels *G, H* are thrown into gear by a hand wheel which raises the lever *L* rocking the shafts *L'* and drawing forward the bearings *E* of the spindle *C'* by means of a connecting rod *M* and transverse bar *N*. The horse is prevented from backing by a ratchet wheel *R* and pawl *R'*, which is depressed so as to engage with the wheel when the lever *L* is raised.

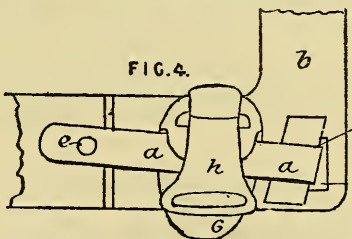
3907. Mason, B. Feb. 22.

Back-bands.—

The object is to lessen the friction of the back-band against the saddle. The back-band consists of a number of links *D* spaced apart by rollers *C* and united by pins *A*, the heads of which are turned alternately in opposite directions while the opposite ends are riveted into nuts *B*.



3925. Mayhew, F. W. Feb. 22.



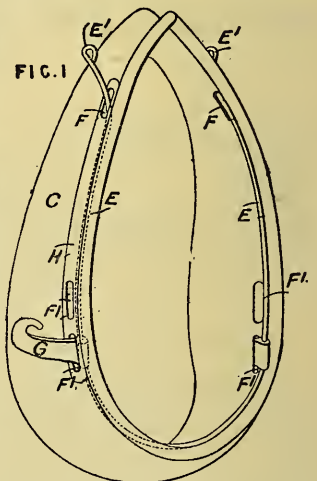
Stirrup-straps, suspending, from ladies' saddles. The stirrup leather is attached to the link *h* hinged

to the hook *G* which rests upon the bar *a*. The bar *a* is hinged to the back plate *b* fixed to the saddle tree and fits over a stud *e* carried by the back plate. A plate spring keeps the bar normally in the position shown. Should a fall occur, the hook lifts from the bar or pulls it outwards on its hinge.

4088. Mack, A. Feb. 24.

Collars, neck.—

The improvements relate to the fittings of the collar. The adjustable tugs *G*, either single, as shown, or forked, pass through slots *F'* in the protecting plate *H* and in the body *C*, and are secured to rods *E* within the body. These rods may project to form terret rings *E'*, or separate terrets may be attached in the same way as the tugs *G*, or the slots *F* may themselves serve to guide the reins.

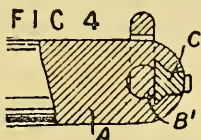


Protecting plates similar to the plates *H* may be fixed inside the collar, in which case the tugs *G* may have T-heads or be otherwise formed

to engage with such plates. The martingale may be attached to the collar in the same way as the traces. In a modification, the fore-wale is grooved in front for the rod E. Ordinary and ornamental hames can be attached to the collar by bolts passed through any of the slots F, F'.

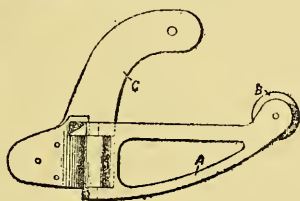
4186. Damnitz, E. von. Feb. 25.

Bits.—The mouth-bar is made detachable from one of the cheeks so that it may be readily removed from the animal's mouth to facilitate feeding. The Figure shows a horizontal section through the end of the mouth-bar A and cheek B'. The cheek has the section shown so that it can be removed from the slot in the mouth-bar only by turning it through a right angle from the position shown. The mouth-bar is kept from accidentally so turning by a bolt C which slides along it.

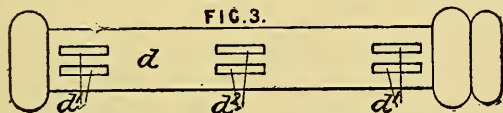
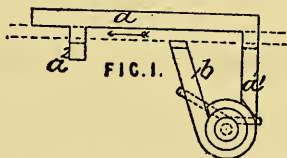


4340. Martin, J. M. Feb. 28.

Stirrup-straps, suspending.—The bar A is hinged to the plate C fixed to the saddle tree, and is provided with a roller B for facilitating release of the stirrup leather.



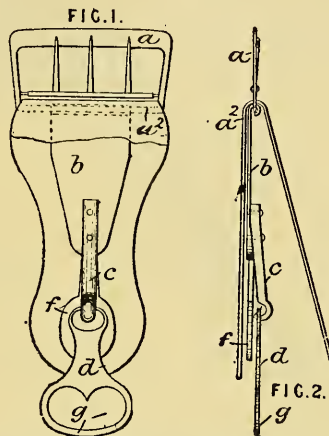
4481. Browne, N., [Franke, J. H.]. March 1.



Stopping runaway horses; rein holders.—The object is to prevent a shying horse from bolting by suddenly drawing the check reins up and keeping them in this position. The means for effecting this object consist of a spring clip, Fig. 1, to be fixed to the collar or other part, and a handbar, Fig. 3, for holding the driving and check reins in position. The spring clip, Fig. 1, consists of a base plate a with two perforated brackets a', a'', of which the former carries the spring-controlled plate b, which may be toothed to grip the rein (shown in dotted lines). In restraining the horse

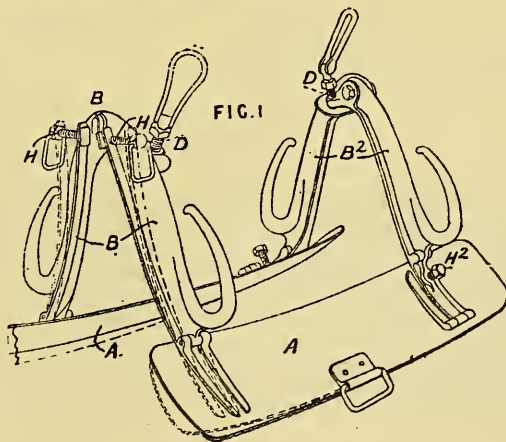
the reins are pulled in the direction of the arrow and are fixed automatically by the plate b. The rein holder consists of a bar d, Fig. 3, slotted at d' for the driving reins and at d'' for the check reins. A distinctive ornament, such as a double knob, as shown, may be used to mark the end to which the off-side reins are attached.

5048. Philpot, A. M., and Philpot, F. March 8.



Fastening reins, bridles, traces, and the like. To the buckle a or its equivalent is attached a metal piece b with a flexible end f bearing against a hook c riveted to the piece b. The hook c carries a piece d, to the part g of which the reins &c. to be fastened are attached so that they can be unfastened by releasing the piece d from the hook c.

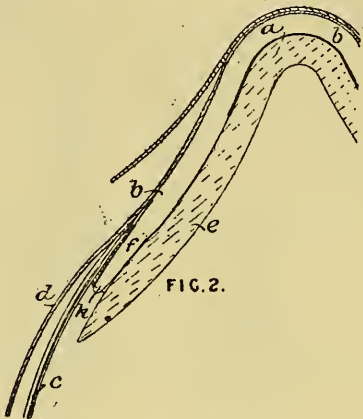
5321. Newburgh-Stewart, H. R., and Squier, F. W. March 11.



Saddles.—The side bars A of pack and other saddles are made adjustable by hinging them to

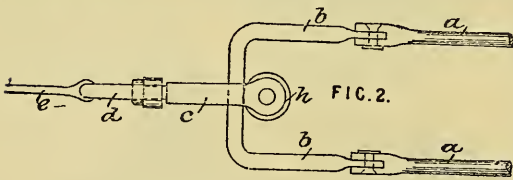
the front arch B near their top edge and to the rear arch B² near their bottom edge, as shown, set-screws H, H² being used between the arches and the hinge or an extension thereof. The arches may be hinged at the top and adjusted by set-screws D, D.

5852. Richards, J. W. March 18.



Saddles.—The Figure shows a transverse section of part of the saddle. The usual panels are replaced by a thin plate of leather *a* and a thick removable pad of felt *e* kept in place by loops or pockets *f* fitting over the ends *h* of the tree *b*. A second flap *c* is placed under the ordinary flap *d* to take the girths.

5854. Stevens, A. March 18.



Reins, bridle.—An extra pair of reins is provided for controlling and stopping runaway horses. The reins *a, a* are attached at one end to the lower ends of the bit cheeks, and at the other end to a bent rod *b*. A swivelling piece *c, d* carrying a roller *h* connects the rod *b* to a buckled strap *e* hooked at its further end to the vehicle. The horse is controlled by pulling the strap *e*, and may be guided by pulling the strap sideways so that the roller *h* runs on the bar *b*.

5390. Hemmingway, J. I. March 20.

Fastening reins. Pointed shanks *b* are cut and bent up on metal plates *a* of any suitable shapes, for fastening reins; the shanks *b* are formed on the outer edges of the plates, or on the edges of comparatively large holes in the plates, in order that strong tools may be used in forming them.

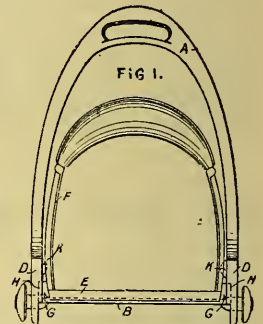
FIG. 4.



FIG. 6.

6010. Scott, J. March 21.

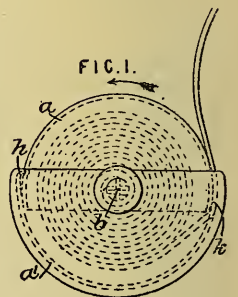
Stirrups.—Improvements in the "Latch-ford" stirrup. The inner bow with its attached tread is released when turned sufficiently in either direction, thus obviating the danger due to hanging the stirrup carelessly. The inner bow F is formed with a tread E projecting equally in both directions and resting upon the bar B pivoted or fixed to the outer bow A. The inner bow has curved projections G fitting into corresponding recesses H in the outer bow; it also has recesses to engage with projections K to prevent it from turning too readily. The bar B may be formed with lugs pivoted to the outside of the legs D, or may be replaced by pivoted brackets.

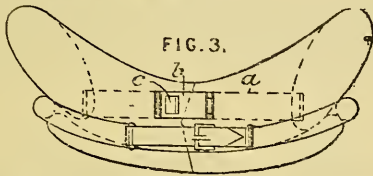


6165. Barwell, W., and Prutton, R. L. March 22.

Dog and like leads.—

The lead is wound in a circular box like a tape measure and may be wound up automatically by a spring. The box may be left attached to the animal's collar and form a name plate or badge. The box consists of two semicircular parts *a, a* hinged together at *b* and provided with a spring catch *h*. The pivot is slotted to hold the end of the lead, and is shaped externally to form a handle. The case may be opened by pulling the strap upwards, and the closing is facilitated by pulling the strap downwards through a slot at *k*.

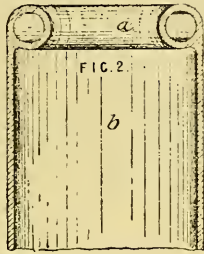


6166. Davies, E. P. March 22.

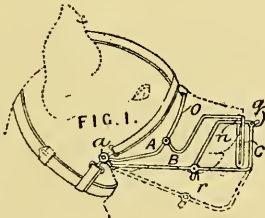
Collars, neck.—Fig. 3 shows a plan of the collar. The collar is divided at the top, and contains a steel strip *a* running parallel with its inner face. This strip is fastened at the top by a hinged plate *b* fitting over a catch *c*.

6419. Callwell, G. N. March 27.

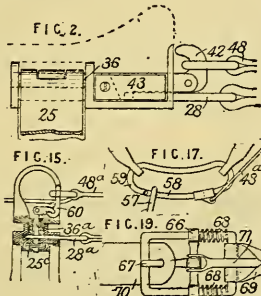
Horse-boots; interfering rings and the like; knee caps.—The article consists of a tube *a* of rubber &c. formed with a depending flap or extension *b*.

**6537. Eli, A. J.,** [Albertin, G.]. March 28.

Muzzles.—The muzzle for dogs &c. is designed to allow the animal to yawn and to drink. It consists of two side bars *A* connected by a bridge piece *O* and terminating in loops *C*, and of a frame *B* hinged at *a* to the side bars *A*, and provided with a cross-bar *r* passing beneath the animal's lower jaw, and a second cross-bar *q* passing in front of the animal's nose. The part *n* of the frame *B* slides in the loop *C*, and a rubber spring connecting the parts *A* and *B* normally holds the muzzle in its closed position.

**6681. Vero, W.** March 30.

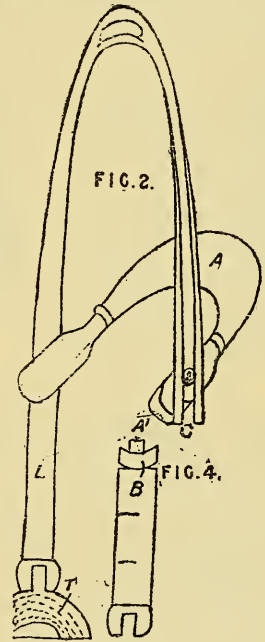
Fastening.—The back-band, crupper, traces, reins, and, in double harness, also the pole chains are released by special fastenings controlled by cords leading to the driver. Fig. 2 shows the back-band and crupper fastening. The back-band 25 in two parts is connected to the saddle by a bolt 36



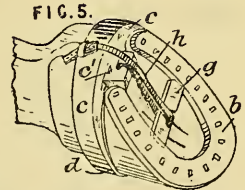
carrying a hinged hook 42 to which the releasing cord 48 is attached. The crupper loop 28 is held by springs 43 forced back by drawing the bolt 36. Fig. 15 shows a modified fastening. The back-band 25^a and crupper loop 28^a are released by drawing the bolt 36^a by the cord 48^a and bell-crank lever 60. The lower ends of the back-band may carry slip hooks for the trace tugs. An ordinary draw bolt is provided to connect the traces to the hames. Fig. 17 shows the hame link for the pole chain. On pulling the cord 48^a, the sleeve 59 allows the hinged part 58 to open out and release the pole chain 57. Fig. 19 shows a buckle for releasing the front section 70 from the rear section 69 of the reins. The buckle tongue 67 is attached to a sliding bar 66 controlled by the cord 71 and springs 68.

6980. Cope, B. E. T. April 5.

Stirrups.—The tread *T* is jointed at one end to the leg *L*, and at the other to a bar, Fig. 4, which has a T-head adapted to fit in the slot *C*, where it is held by the shouldered end *A*¹ of the pivoted inner bow *A*. The tread is freed to liberate the rider by the turning of the inner bow into the position shown.

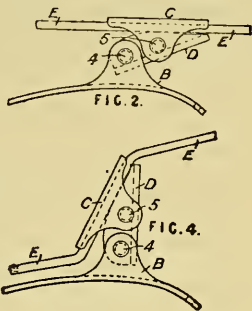
**6986. Heath, R.** April 5.

Horse boots for preventing capped elbows caused by the contact of the caulks or other parts of the fore shoes with the elbows when the animal lies down. The semicircular pad *c* of rubber &c. formed with the projection *c*¹ is secured to the hoof by the strap *d*, and also, if necessary, by the strap *h* connected to the cross-bar *g*, which is wedged in the shoe *b*.

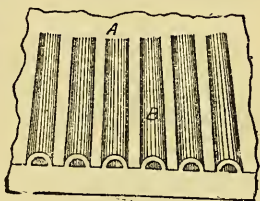


7300. Klügel, F. E. R. April 10.

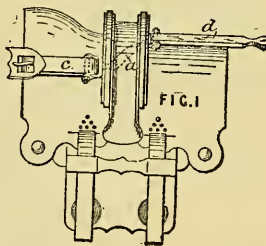
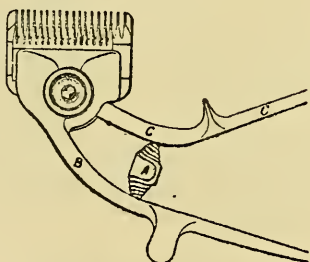
Stopping runaway horses.—The reins E, Figs. 2 and 4, are guided by a clamping device fixed to the collar. The device consists of two jaws C, D pivoted together at 5, and to the base plate B at 4. Under ordinary circumstances, the reins pass freely through the device, as shown in Fig. 2; but to control the animal the reins are pulled sharply backwards, and then slackened, when the clamp takes the position shown in Fig. 4, and firmly holds the reins. On again pulling the reins, the device takes its normal position, Fig. 2.

**7321. Purdie, J. J.** April 10.

Pads for harness. The pads are for horse collars &c. A number of parallel tubes B of rubber &c. are vulcanized to a backing A of the same material. The Provisional Specification states that this pad may be fitted over an inflated rubber cushion.

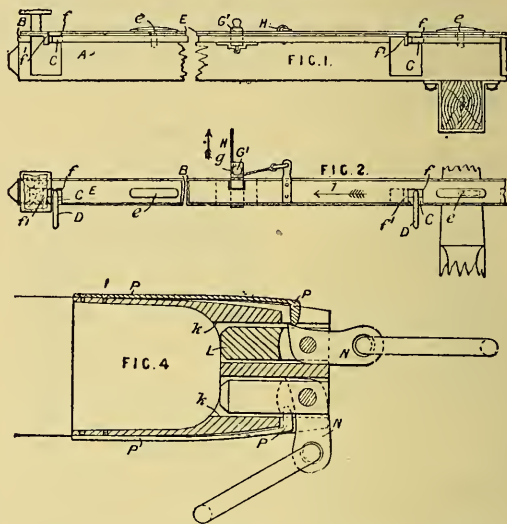
**7815. Hepworth, J.** April 18.

Saddles, cart. The "fore buckle" c, for attachment to the collar, and the crupper d, instead of both being fastened to the saddle by nailing &c., are secured to shackles at the ends of bars a let into the underside of the saddle.

**7900. Rae, J.** April 19.

Horse &c. clippers.—The spring usually enclosed

between the upper and lower toothed plates of the clipper and its adjusting screw and bearing bridge or eye part are dispensed with, and a volute or like spring A is placed between the handles B, C which are arranged at an angle to the cutters as shown.

8070. Robertson, F. S. April 21.

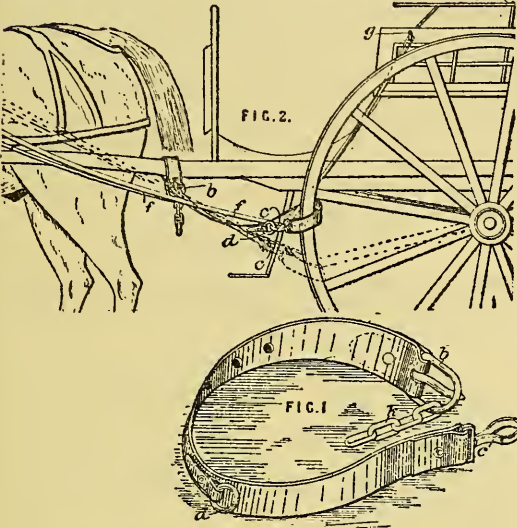
Fastening.—The object is to release runaway or fallen horses. The splinter bar A has attached to it a metal bar B, on which are formed, in the case of a two-horse vehicle, four hooks C, with which rings D on the ends of the traces engage, and on which they are held by projections f¹ on a movable bar E which is slotted to accommodate screws e, by which it is secured to the bar B. The bar E is held in the position shown in Fig. 2 by a spring, and is locked by a bolt G¹. A cord H passes round a pulley g on the said bolt, and is secured to an eye in the bar E. Should the horses fall or bolt, the driver by pulling on the cord H unlocks the bolt G¹ and moves the bar E in the direction of the arrow 1, so that the sides f' of the slots in the said bar push the rings D off the hooks C and release the horses. In single horse vehicles the shafts may be attached to the splinter-bar in the manner described. If the horses bolt, their forward pull on the pole chains, after the traces have been released, rotates the links N, as shown in the upper part of Fig. 4, so that the spring catches P are pushed aside to free the blocks L, which can then be pulled out of the recesses k in the pole-cap.

8193. Wood, A. April 24.

Stopping runaway horses; breeching; back and belly bands; traces.—The strap shown in Fig. 1 is secured to one of the vehicle shafts, as shown in Fig. 2, by passing the end with the spring shackle c through the buckle b. When the vehicle

is to be left unattended, the end *c* is passed round the felloe of the wheel and attached to the ring *d*, the reins *f*, which are secured to a hook *g*, being held in the loop so formed. Should the

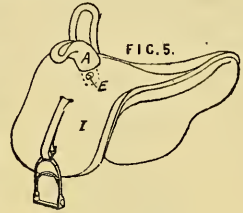
with a joint C, D, and with a hinge E to facilitate fixing in an undercut groove, as shown at B in the crutch head A, Fig. 2. The cover may be laced or stuck on to the frame, or be secured by nails &c.



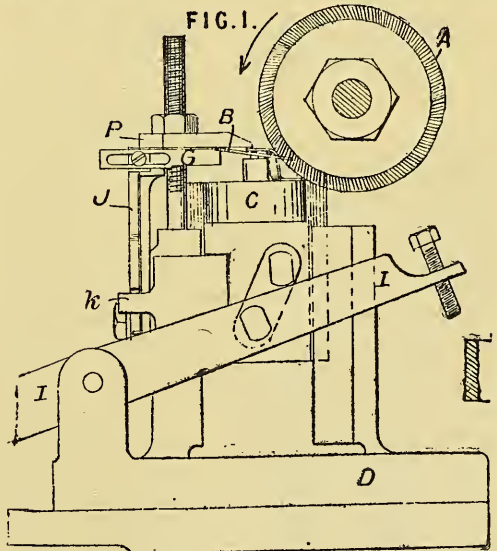
horse start, the strap is tightened, as shown by dotted lines, so that a pull is exerted on his head and, at the same time, the wheel is locked. Both wheels might be similarly locked. The length of the strap may be adjusted by altering the size of the loop surrounding the shaft, or the strap may be in two pieces connected by a buckle. A chain *k* may be secured to the buckle *b* so that the strap may be used as a back-strap for a seat or as a kicking-strap, a back or belly band, or trace.

9008. Hayes, M. H. May 5.

Saddles, ladies'. The leaping-head A of ladies' saddles has the form and position shown so that the side pressure of the rider's left knee is directed towards the flap I. The leaping-head iron may be formed with a bent end through which the fixing screw E passes or, as stated in the Provisional Specification, the bent end may be dispensed with in constructing new saddles. The flap of the saddle is formed with a slit and a bolt hole for the leaping-head iron and bolt E respectively.

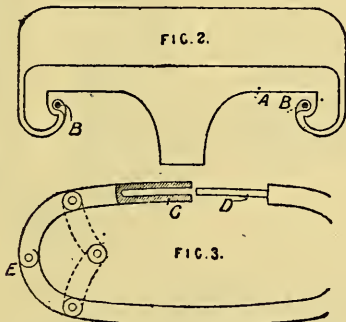


9080. Robinson, A. D., and Brooks, J. W. May 6.



Spurs.—Relates to machinery for filing or finishing spur rowels and tracing wheels. The rowel or tracing wheel B is mounted on a pivot in a holder on the slide C, and is raised to or lowered from the rotating file A by the lever I. The file is bevelled so as to enter the notches between the teeth, and the stand D and slide C can be adjusted to allow teeth of different sizes to be operated upon. The adjustable stop P is arranged to give the necessary inclination to the rowel &c. while the file is acting. The rowel or tracing wheel may be turned on its

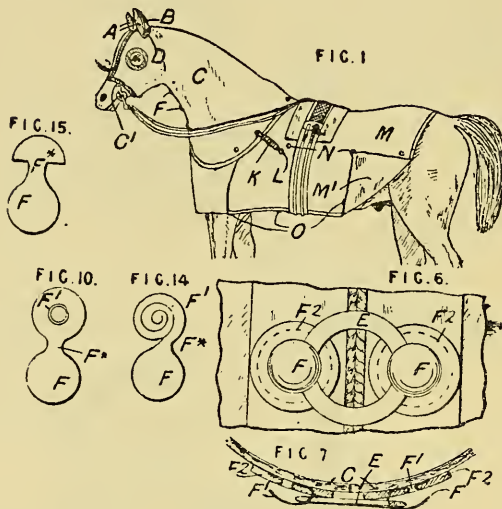
8204. Stanfield, W. A. April 24.



Saddles; lining and padding.—Cushions or pads for seats, lounges, beds, crutches, saddles, harness, &c. are formed of an inflated air bag fitted with a suitable valve. The edges of the cover may be thickened, strengthened, or reinforced in any suitable way, but by preference wire or other material is placed in pockets formed in the edges thereof. Fig. 3 shows a form of wire used, being provided

pivot by hand to bring the teeth successively into position, or it may be turned by the detent G which is mounted on a slide operated through the lever J by the plate *k* fixed on the slide C. Several modifications are described. In one of these the slide moves horizontally; in another the holder is fixed and the file is mounted on a lever by which it is advanced to the work. Two files, each bevelled on one edge only, are employed when the operation is to be continued past the roots of the teeth, as in forming a star pattern on hunting and military spurs.

9187. Taaffe, P. May 8.

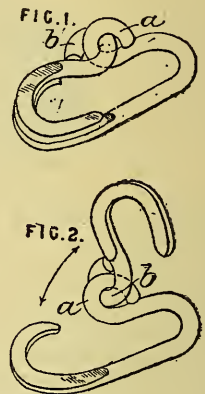


Clothing for animals.—The objects of the invention are to allow a horse to hear and to allow it to turn its ears when it has a hood on, to ventilate the ear, to provide means for fastening the clothing and prevent it from shifting, to allow the clothing to be tucked up and held in its tucked-up position, to make the head-piece more comfortable, and to provide a durable fastening in lieu of breast straps. The ear piece is made in two parts A, B shaped to fit the ears and with the front part perforated, and is attached to the hood C by an elastic or stockinette piece D. The front part C' is shaped so as not to interfere with the bit, and the edges underneath the head are connected together by flexible connections. The edges of the hood butt together and are fastened by hooks F and rings E or their equivalents. The hood is connected to the cloth M by elastic straps K and hooks O, and rings, eyes, or hooks N are fixed to the cloth to enable any part of it to be tucked up as at M'. The hooks F are each made from one piece of sheet metal and are fixed to a leather disc F² by an eyelet-like tube F¹. Figs. 10, 14, 15 show different forms of blanks. The inner part F passes through slits in the leather washer F². The back part of the ring may be spirally cut or formed, as in Fig. 14, so that it can be put through a small slit in the washer, or the back part may be semicircular, Fig 15 and be

inserted in a similar manner. A band having notches at the ends may be used instead of a ring F. Such band may be elastic and have loops at the ends. The hooks O may consist of wire hooks or loops or of metal plates bent over, and the corresponding fastenings N may be formed like the hooks F, Fig. 6; or when used with the bent metal plates above referred to may be formed like staples made from a rectangular piece of sheet metal. The fastenings L may consist of studs the bases of which are slit to allow them to be inserted through slots in leather discs. The straps K consist of three parts, a sheath, a buckle and strap for connecting one end of the sheath, and an elastic &c. strap fitting the sheath.

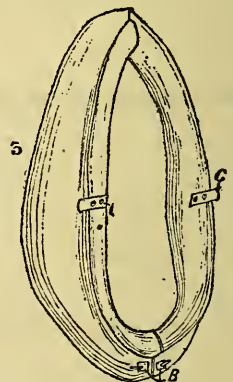
9823. Bobb, G. May 16. [Date claimed under SEC. 103 of PATENTS &c. ACT, 1883, October 25th, 1892.]

Fastening.—Relates to a lap link or sister hook. This hook or link is shown open at Fig. 2, and closed at Fig. 1. The joint consists of two loops *a*, *b* at right angles when the link is closed. The link may be applied to double trees or single trees.



10,010. Tozer, S. May 19.

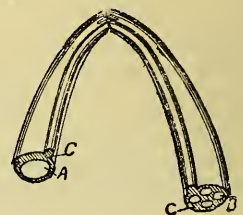
Collars, neck.—The collar, which is hinged at the top, is made of wood, and is fitted with brass plates B, C for straps &c.



10,077. Redmond, L. May 20.

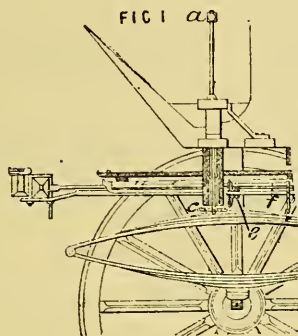
Collars; saddles; pads and padding.

—The collar, saddle, or other part of harness, is formed or provided with an inflated chamber A or chamber B of rubber &c.



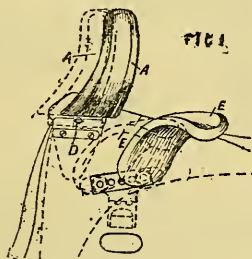
The chamber may be covered with rubber, leather, canvas, &c. C.

- 10,112. Boulton, A. J.,** [*Garcia-Closa, F., and Picazo-Soriano, A.*]. May 20.



Runaway horses, releasing.—The pivot pin of the forecarriage carries at its lower end a bevel pinion *c* and at its upper end a projecting handle *a* by means of which the driver can rotate the pinion. This gears with a second pinion *e* which rotates a spindle *f* the front end of which actuates, by suitable mechanism, a sliding bolt within the hollow whipple-tree or splinter-bar. This bolt serves to secure the fastenings on the ends of the traces or to secure the shafts when the vehicle is drawn by only one horse, and when it is withdrawn by the rotation of the spindle *f* the traces or the shafts are free to be carried away by the horses. For a two-horse vehicle, the end of the pole is fitted with a removable cap which is also carried away with the pole-chains.

- 10,443. Hayes, A., Hampson, W., and Scott, J.** May 27.



Saddles, ladies'. The object is to make ladies' riding saddles capable of adjustment to suit different riders. The crutch *A* is made to slide in the saddle tree and is secured in position by a set screw *D* or by a screw by which the adjustment is effected. Or the crutch may screw into one of a series of holes in the saddle tree. The crutch may be used in combination with a fixed or a movable leaping-head *E*.

- 10,181. Ashberry, P., and Barnes, W.** May 23.

Horse &c. clippers.—

Flexible shafts for sheep shearing &c. machines. A coiled shaft is made from a strip having a waved, serrated, or toothed configuration, so that the coils are locked one to the other for the purpose of resisting torsion. The coils are made in short lengths; they are screw threaded inside at the ends and are coupled by short screws having a central collar.

FIG. 2.



FIG. 3.

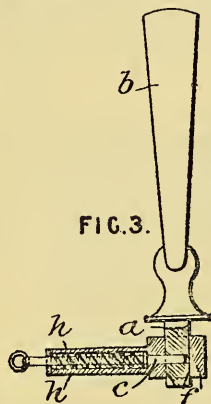


- 10,308. Jenkins, R.** May 24.

Terret rings.—

Relates to a method of readily attaching or detaching terret rings from harness. In Fig. 3, the block *f* is fixed in the pad of a saddle or other part of the harness. A square tongue *a* on the terret ring *b* is inserted into a corresponding opening in the block *f*, and locked by a transverse bolt *c* which is pressed home by a spiral spring contained in the tube *h*. The terret ring can be detached from the harness by pulling out the bolt *c* by hand.

FIG. 3.

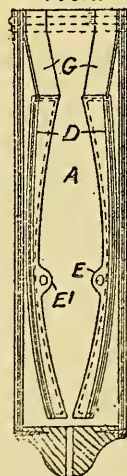


- 10,903. West, F.** June 5.

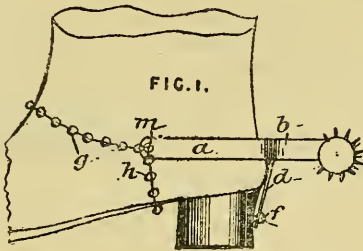
Whip sockets.—

Two concave levers *D* are pivoted at *E*, *E'* inside the whip socket *A* and are attached to elastic bands *G* which tend to move the levers into the position shown ready to receive the whip. When the whip is inserted, it separates the lower ends of the levers and allows their upper ends to close upon the whip and hold it firmly. The socket and the levers may be covered with leather.

FIG. 1.



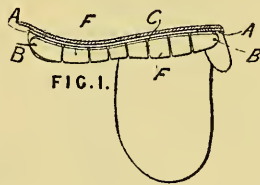
10,986. Withers, T. G., and Withers, S.
June 5.



Spurs.—A hole *m* or hook is formed at the end of each arm *a* and a lug *d* projects from the neck *b*. A screw *f* is passed through the lug *d* into the heel of the boot, and a strap, elastic band, or chain *g* *h* passes from the hole *m* or hook around the boot as shown. The lug *d* may be dispensed with.

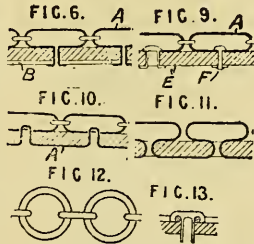
11,260. Burnup, J. M., [Bourrelley, G.].
June 8.

Saddles.—The saddle is adapted to fit different backs, can be used even if the animal has sore places, and provides for ventilation. Fig. 1 shows a vertical section. The ordinary padding is dispensed with and in place of it there are a number of panels *F* covered with sealskin &c. and freely mounted upon two parallel rods *C*, fixed by brackets *B* to the saddle tree *A*. The panels are spaced apart for ventilation and the rods *C* are composed of bundles of wire or made of cane, whalebone, &c. If the animal has a sore place the panel which would press upon it is removed.



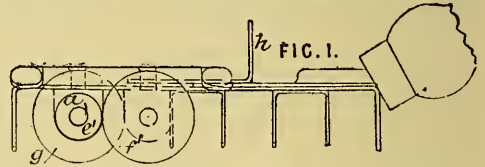
11,415. Richards, J. June 10.

Bridles.—Relates mainly to securing the broad flat metal links to bridle fronts. Figs. 6, 9, 10 and 11 show in section various ways of carrying this out. In Fig. 6 the broad links *A* are shown attached by extensions of the links themselves passed through the leather or metal band and bent over as shown. The wire *B* passing through the ends of the shanks may be dispensed with. In Fig. 9 the links *A* are shown attached by separate rivets *E*, *F*, and in Fig. 10, by a band *A*. In Fig. 11 the links are formed by bends in the attaching strip.



Figs. 12 and 13 show in plan and section a method of securing ordinary circular links by studs.

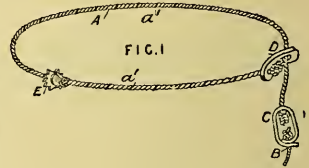
11,473. Atkin, H. June 12.



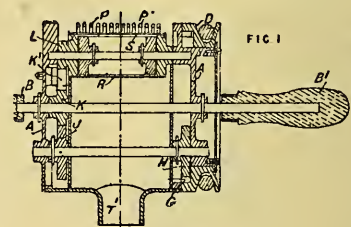
Curry combs.—A rotary brush *g* is mounted on a spindle *a*, and is operated by friction wheels *e*, *f* from the skin of the animal. The brush is cleaned by a serrated sliding plate *h*.

11,528. Lake, H. H., [Lariat Manufacturing Co.]. June 12.

Lasso for animals.—A gathering rope *B* is connected to a leather swivel *C* to which is also attached a thicker loop-forming rope *A*, stiffened by means of wire or stiff fibre *a'* wound spirally around the outside as shown, or passing down the centre thereof. One end of the rope *A* is attached to a leather swivel *D*, the other passes through a hole therein. A leather stop *E* is employed when the lasso is used as a toy to prevent the loop being drawn too small.



11,657. Hickson, G. W. June 14.



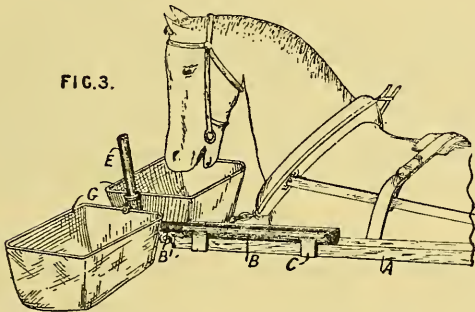
Horse &c. clippers.—The Figure shows a section of the apparatus, which consists of a frame *A* provided with handles *B*, *B'* and carrying a comb *P*, a fixed cutter *S*, and a revolving cutter or cutters *D* actuated by suitable gearing. The gearing consists of a pulley *D* provided with teeth *G* and gear wheels *H*, *J*, *K*, *K'*, and *L*. In place of the comb *P* there may be revolving brushes for guiding the hair to the cutters. The cut hair is drawn away and discharged through the opening *T'* by the air current from the rotating knives, or by other suitable means.

12,089. Thompson, J. June 20.

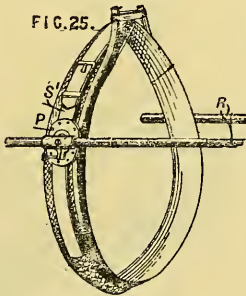
Whips.—Steel or other metal wires *a* are enclosed in the thong *b*, which is secured to the handle *e* by the screwed ferrules *c, d*.



12,110. Rossi-Gallico, A. de. June 20.

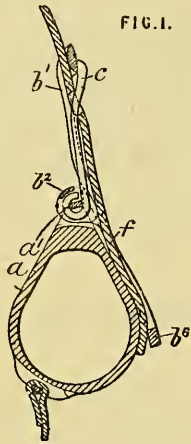


Nosebags; sun and weather screens. — A folding or rigid manger or nosebag is adjustably supported by the pole, shafts, or horse collar. Fig. 3 shows one method of supporting two bags *G* from the pole *A*. The frames of the bags, which may fold together, are supported by a tube *E* which folds into the trough *B*¹, itself sliding into the trough *B* fixed by clips *C* to the pole. Several forms of jointed and telescopic rods are described as a substitute for the above. The nosebag may be supported by an extension of the shaft or pole itself. In Fig. 25, the rods *R* supporting the nosebag are shown fixed by clips *P* attached to the horse collar by a strap *S*¹. The head screen consists of a folding frame covered with fabric &c. and adjustably supported by a vertical rod fitting into a socket carried by one of the arms supporting the nosebag.

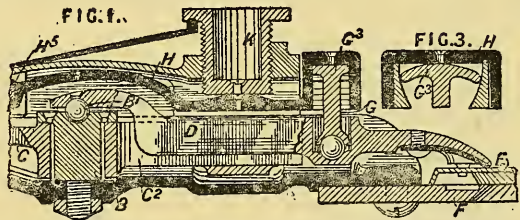


12,114. Haas, S. H. June 20.

Tugs, shaft; fastening.—The fastening consists essentially of a bar of rectangular section and a hook with an opening narrower than the wide side of the bar, so that to disengage the hook from the bar the parts have to be turned in a certain relative position that could not occur when the harness was in ordinary use. The Figure shows the fastening as applied for securing a back-band *f* to a shaft tug *a*. The shaft tug carries the cross-bar *a*¹ of rectangular section, and the buckle frame *b*¹ carries the hook *b*² engaging with it. The hook is slotted for the buckle tongue *c* and the frame is continued beyond the hook, as shown at *b*⁶. To disengage the buckle frame from the shaft tug, the frame has to be turned to the left through a right angle. The same fastening may be used for securing the trace to the hame tug.



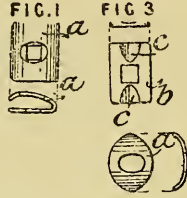
12,140. Ford, M. June 20.



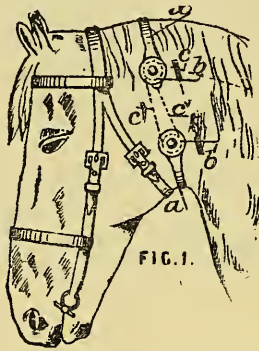
Horse &c. clippers.—Fig. 1 shows a longitudinal section of the apparatus. The cutter *E* is reciprocated over the comb *F* by the main lever *C* and intermediate forked piece *D*. The main lever *C*, oscillated in any suitable manner, is pivoted to the fixed pin *B* and grooved at *C*² to embrace the fork *D*. The fork *D* is supported on the pin *B* by a ball bearing *B*¹ and is pressed down by the tension rocker *G*; the sides of the fork *D* where embraced by the main lever *C* are convex. The tension rocker *G* has a ball bearing at its lower end, as shown, or is forked to embrace a rounded part of the fork *D*. The tension rocker has a segmental top *G*³, Figs. 1 and 3, and the tension plate *H* against which it bears is specially shaped to receive it. The tension plate *H* is hinged at *H*⁵ to the casing and is pressed down by the tension screw *K*. The rocker *G* may have a spherical head held by an annular piece in a cylindrical recess either in the bottom of the tension plate or in the tension screw.

12,177. Martin, A. June 21.

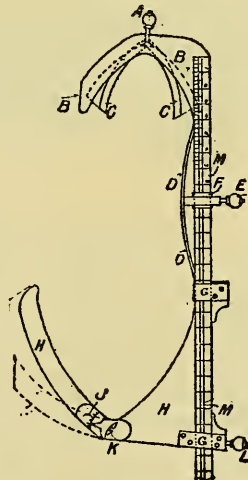
Horse &c. clippers.—Relates to washers and washer plates for communicating the pressure of the nuts to the upper cutter. Two forms of washers *a*, Figs. 1 and 3, are used. The washer *a*, Fig. 3, bears upon a second washer *b* or upon a washer plate with grooves *c* for the ends of the washer *a*.

**12,235. Jagelitz, C.** June 21.

Bridles; stopping runaway horses.—A strap *a* is tightened round the throat to control runaway or restive horses. The strap *a* carries pulleys *b*, *b'* over which the actuating cord *c* runs, as shown.

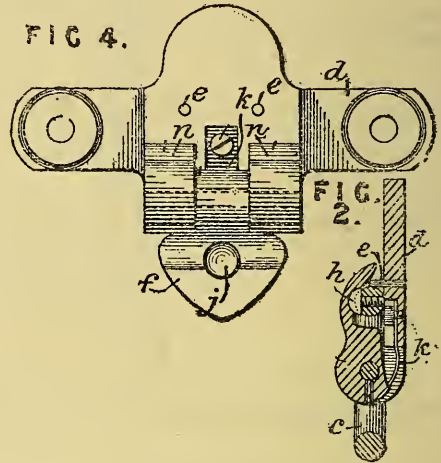
**12,268. Emmett, J., and Emmett, H.** June 22.

Measuring for collars. The apparatus consists of a rule *M*, *M* carrying a fixed piece *B* and sliding pieces *F* and *H*. Arms *C*, *C* adjusted by the thumbscrew *A* measure the width of the top of the neck, and an arm *H* adjusted by the thumbscrew *K* and graduated at *J* measures its width at the bottom. The sliding piece *H* is adjusted by the thumbscrew *L*. The hollow of the neck is measured by the spring *D* adjusted by the thumbscrew *E* on the slide *F*.

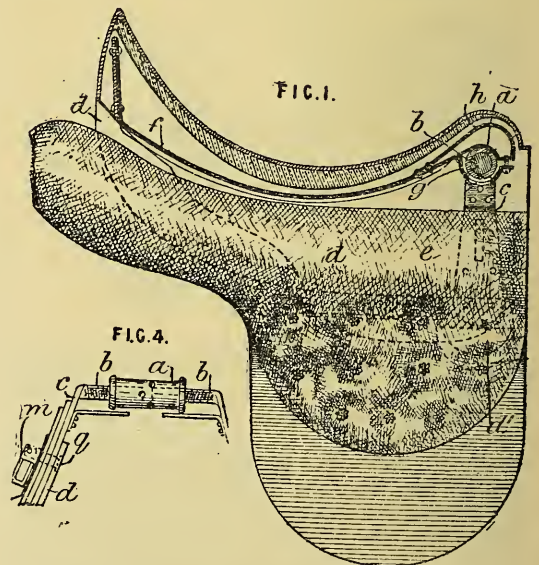
**13,032. Rooney, J. J.** July 4.

Stirrup-straps, suspending.—Fig. 2 shows a vertical section of the saddle-bar or stirrup holder in its normal position, and Fig. 4 shows a front view of the

saddle-bar with the loop for the stirrup strap removed and the hinged clasp turned down. The stirrup leather is attached to a loop *c*, Fig. 2, which is suspended on the hooked projections *n*, *n*, Fig. 4,



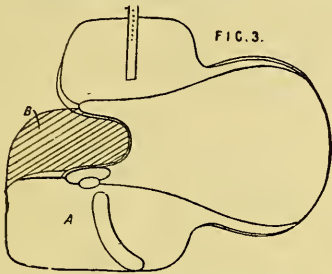
of the plate *d* fixed to the saddle-tree. The loop *c* is kept in place by the pins *e*, *e* and the hinged clasp *f* provided with a spring *k*. A knob *h* on the loop *c* fits into a depression *j* in the clasp and keeps the loop central. If the rider is thrown, the clasp opens and releases the loop with its stirrup strap.

13,280. Käding, C., and Knauf, O. July 7.

Saddles.—The side bars *d* formed of several layers of leather are attached by rivets and by the bolts *q* of the saddle-bag loops *m* to plates *c* formed with right and left handed screws *b*, *b*, united by a

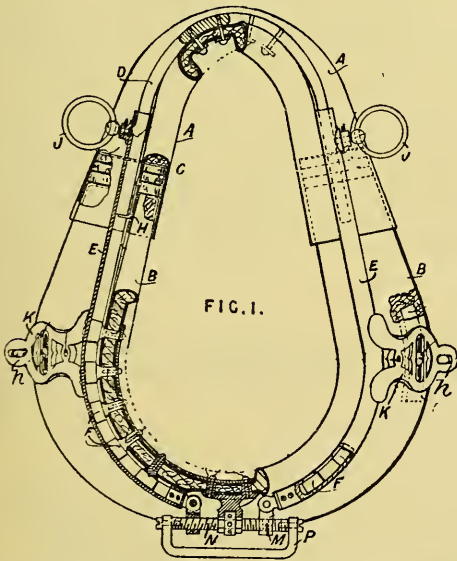
sleeve or nut *a*. By turning the nut the inclination of the side bars may be varied. The nut *a* is received in a socket *g* connected by a metal strip *f* to the cantle. The pommel is strengthened by a curved plate *h* riveted in place. The panels or pads *e* are attached to the side bars by pockets fitting over the extensions *d'* of the side bars.

13,457. Leatherby, C. B. July 11.



Saddles, ladies'.—The top of the safe *A* of ladies' saddles is cut away at *B*, thus leaving the withers free and facilitating ventilation. The saddle-tree is unaltered.

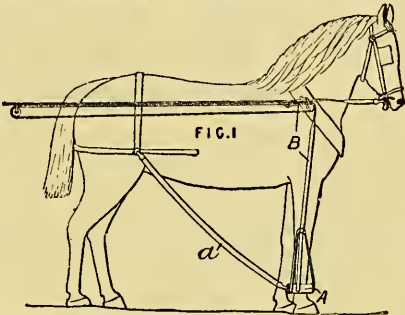
13,476. Ohl, G. D. July 11.



Collars, neck.—The Figure shows an elevation of the collar with certain parts in section. The body of the collar is in two parts *A*, *B* which telescope together. Internal packing pieces *C* are used between the two parts. The hames are in three sections *D*, *E*, *E*, the upper section *D* being adjustably fixed in the tubular lower sections *E*, *E* by the screw shanks of the terret rings *J*. A bent plate *H*, secured to the upper collar section *A*,

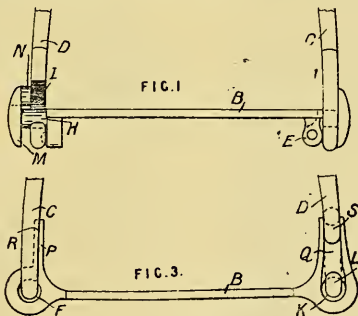
passes through a slot in the hollow hame section *E* and engages with the end of the upper hame section *D*. The lower hame sections *E*, *E* are moved longitudinally to widen or narrow the collar by means of nuts *M* and a right and left handed screw *N*, fixed pins *F* passing through slots serving to guide these hame sections. The traces are fixed to the eyes *h* of the plates *K*, rings (not shown) may also be attached to the plates for the breast straps of wagon-team horses. The link *P* may be used for a strap connecting the collar to the girth &c.

13,520. Birtz, N. July 12.



Stopping runaway horses.—This consists of a hobble *A*, held in place by a strap *a*, and raised or lowered by a strap *B* connected to the rein, as shown, or otherwise arranged. The horse is stopped by lowering the hobble.

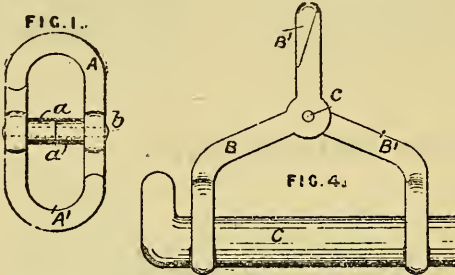
13,620. Hampson, W., Scott, J., and Bowdler, W. July 13.



Stirrups.—The Figures show the two methods employed for connecting the tread *B* of the safety stirrup to the legs *C*, *D*. In Fig. 1, the tread *B* is pivoted to the leg *C* by a hinged and pivoted joint *E*, and is detachably connected to the leg *D* by a pin *H* and slot *I*. The pin has a broad head *M* bearing against a pin *N* to prevent the tread from pivoting forwards. In Fig. 3, the tread *B* is connected to the legs *C*, *D* by eyes *F*, *K*. The eye *F* is provided with an extension *P* fitting into a

groove R, and the eye K which takes on to a hook L has an extension Q fitting beneath a hook S. In both forms of stirrup the tread is freed at one end if the rider is thrown with his feet in the stirrups.

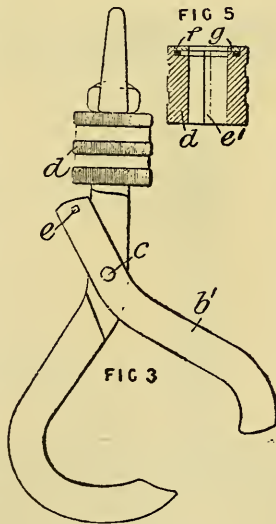
14,088. Hodge, W., and Pearson, J. July 20.



Fastening.—Relates to coupling links and hooks or shackles for harness &c. The link, Fig. 1, consists of two similar overlapping pieces A, A', formed with central bosses a, a', through which the pin b passes. The shackle or hook, Fig. 4, consists of two parts B, B' formed into a hook at one end and an eye at the other end pivoted together in the centre. A bolt C with notches to fit over the eyes prevents the hooks from being separated till the bolt is turned. The parts B, B' are formed with central bosses through which passes the pivot pin c.

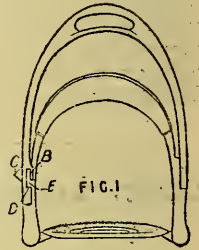
14,371. Newbould, J. July 26.

Fastening.—Relates to a slip hook for pole chains &c. Fig. 3 shows the hook open, and Fig. 5 shows a section of the sliding collar d. The tongue b' is hinged at c to the stem of the hook, and is provided with a pin e to take into a groove e', Fig. 5, in the collar when the hook is closed and the collar drawn down. The collar is prevented from shaking back by a split spring f, kept in place by a washer g. The spring can turn within certain limits defined by a stop, the pin e resting between its ends, thus giving a bayonet-joint lock.

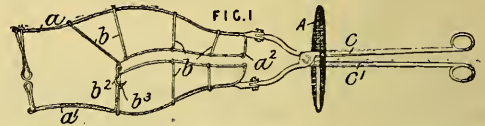


14,654. Cope, B. E. T. July 31.

Stirrups.—Relates to a detachable joint in the leg of a safety stirrup in which the tread is jointed to both legs. Fig. 1 shows one form of the joint. The extremity E is forked to engage the joint pin G and comes away from this pin when its shoulder leaves the curved supporting shoulder D. The projection B may be replaced by a flat head on the joint pin. The inner bow may be dispensed with.



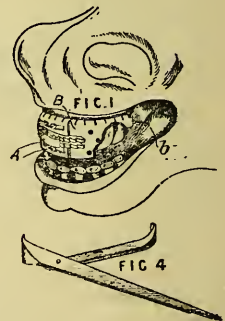
14,714. Pottle, J. D. Aug. 1.



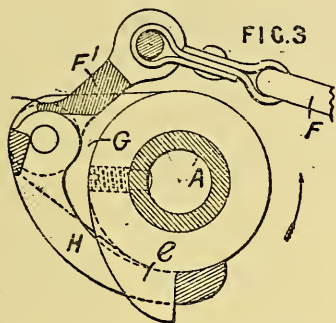
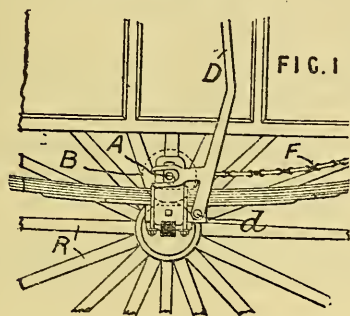
Muzzles.—The muzzle is for use by the police &c. to enable a dog to be held by one hand while the muzzle is being put on by the other. Fig. 1 shows one form of muzzle which can be opened like a pair of jaws by the handles c, c' provided with a guard A. After the head of the dog is enclosed, the upper and lower halves of the muzzle are secured by a hook b² and eye b³ or by a strap, and the levers c, c' may be disconnected. In a modification, the levers are replaced by a bow spring, or there may be no separate means of operating the muzzle, its halves being hinged at the point a². The wires b may be replaced by semicircular strips pivoted to a, a' so as to fold up. The Provisional Specification states that a spout for medicines may be combined with the muzzle.

14,914. Burvill-Holmes, E., Keelor, A. Z., and Marsteller, E. Y. Aug. 3.

Crib-biting, preventing.—Adjustable steel plates A, B are secured to the upper teeth and project slightly below them, so that when the animal bites the manger a painful pressure is put upon the gums. The plates A, B are hooked to the teeth at b and are connected by a pawl and ratchet. Fig. 4 shows a pair of pliers for adjusting the device.

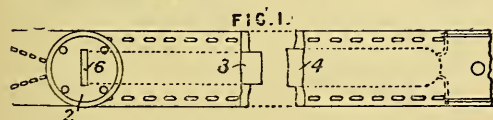


14,921. **Ottaway, J. P.** Aug. 3.



Stopping runaway horses.—The device is for use with horses which are left unattended attached to a vehicle. When the device is in operation the horse is checked when it begins to move forward, but remains free to move backwards. Extra reins are attached to chains which may be wound upon a shaft parallel to the axle of the road wheels. Fig. 1 shows a chain F and road wheel R and parts in connection therewith, and Fig. 2 shows the connection between the chain F and shaft A. The chain F, Fig. 3, is attached by a link F' to lugs G free to turn on the shaft A. A loop H is also pivoted with limited motion to the lugs G, and a ratchet tooth *e* on the shaft A engages with the loop when the shaft turns in the direction of the arrow. The shaft A carries a friction roller B, Fig. 1, to engage with the hub of the road wheel. The roller B is thrown into gear with the hub by a hand lever D pivoted at *d*. The driver on leaving his cart puts the roller and hub into gear, with the result stated above.

15,023. **Wagg, H. J.** Aug. 5.

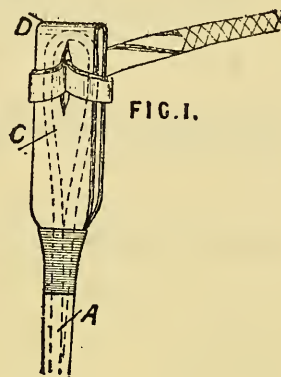


Dog collars.—Dog collars are made with a pocket to contain a label 3 upon which the owner's name and address is stamped. The label is secured at one end to a piece of elastic webbing 4 which tends to draw the label into the pocket, and at the other

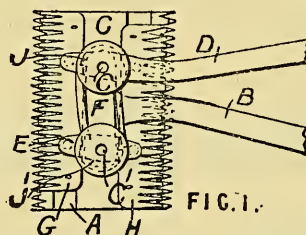
end to a ring or clip 6 by which the label is drawn out. The ring or clip is kept in place by a slotted plate 2.

15,321. **Upton, W. S., Upton, E. R., and Upton, A. C.** Aug. 11.

Whips.—Relates to the keepers for attaching the thong to the stock. The steel core A, the subject of Specification No. 2315, A.D. 1892, is continued to form a loop C within the keeper D, which is thereby made more durable.



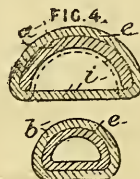
15,652. **Wolseley Sheep Shearing Machine Co. and Austin, H.** Aug. 18.



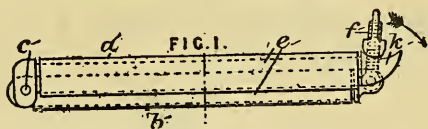
Horse &c. clippers.—The tool is formed with a double cutting edge, as shown. In the form shown, two cutter plates G, H are reciprocated over the edges of the comb plate A by the lever handle D and link E which are pivoted on bolts C, C' and carry conical pins fitting into sockets in the cutter plates. The cutter plates are pressed down by the binding plate F and nuts J, J' upon the bolts C, C'. The nuts may be locked by teeth formed on their under face engaging with spring lugs on the plate F or on a separate plate. This method of pressing down the cutter plate may be employed to other forms of horse clippers. The handle B is fixed to the comb plate A by the bolts C, C'.

15,942. **Godden, W. J.** Aug. 23.

Manes, devices for arranging.—Two bars *a*, *b* of U and D section respectively are jointed together at *c* and are provided at their free ends with a jointed screw *f* and a jaw *k*. The bars are covered with rubber

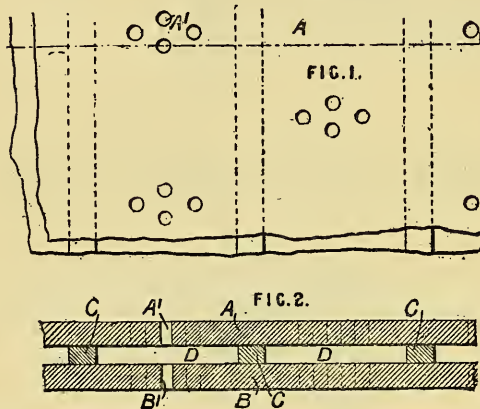


tubes *e*. After winding the hair upon one of the bars the apparatus is fixed in position by clamping the two bars together. When the bars are pressed



together the part *i* (on the bar *a*) of the rubber tube is forced by the bar *b* into the position shown in dotted lines.

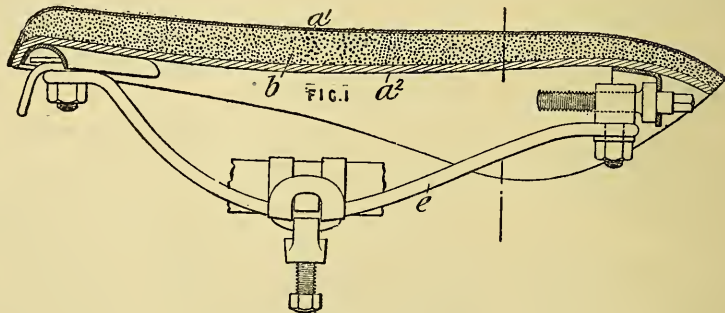
15,953. Weston, H. Aug. 23.



Saddles.—A seat, cushion, saddle cover, &c. is made of two layers A, B of flexible material, such as felt, cloth, rubber, leather, &c., or of combinations of these materials, separated by strips or blocks C of the same or different materials fastened by cement. Perforations A', B' allow air to circulate in the internal channels D. One layer A may be used in connection with a rigid base.

16,566. Rath, A. I. Sept. 4.

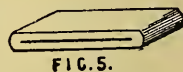
Saddles.—The covers of cycle and other saddles are formed by interposing cellular elastic material *b*, such as sponge rubber, between an upper covering *a*¹ and a bottom plate or covering *a*². The seats or covers may be mounted upon the usual cycle saddle or other framings *e*. Air spaces may be alternated with pads of cellular elastic material.



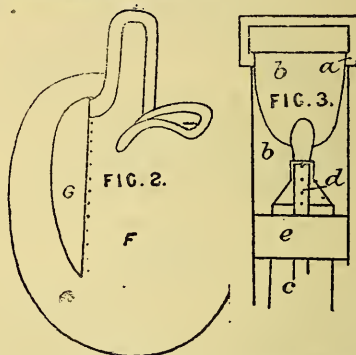
16,123. Sloan, R. A., [Bringham, F. J., and Bargate, G.]. Aug. 26.

Blinkers; loops for straps.

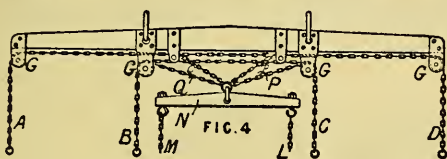
—Relates to a method of and machinery for making various seamless leather articles. Harness blinkers and loops for harness and saddlery are mentioned. The method consists in cutting a strip or plate of leather to the required size if necessary, splitting it, and then opening it out. Fig. 5 shows the first step in making the seamless leather loop, Fig. 6.



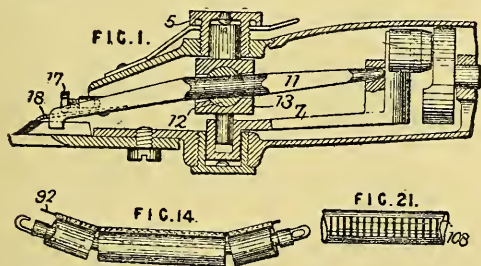
16,453. Mayhew, F. W. Sept. 1.



Saddles.—To remove the lumps caused by the girth straps and buckles from underneath the legs of the rider, the ends of the girth band *b* are provided with straps *d*, and are passed round metal loops *a* fixed to the saddle-tree. A short band *c* is held in position on the girth by bands *e*, and the straps *d* are secured to buckles on the ends of the short band *c*. In order to increase the grip of the rider and to assist the body to a square position on a side saddle, the safe or flap *F* is cut away at *G* for the leg to rest in, and for it to be as near to the horse as possible. The part *G* may be fitted with a gusset piece.

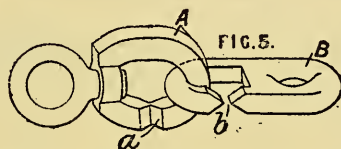
16,572. Carruthers, B., and Jack, J.
Sept. 4.

Traces.—The object is to equalize the pull of two or more horses attached to a vehicle, or to a reaping machine or other agricultural implement, and to facilitate turning. Fig. 4 shows one arrangement for three horses. The traces A and D are connected together, and similarly the traces B and C. The traces M, L of the middle horse are attached to a cross-bar N connected by four chains P, Q to the other traces, as shown. The traces A, B, C, D run over pulleys G or round smooth surfaces. When there are only two horses, the parts L, M, N, P, Q are dispensed with. Modifications are described and illustrated.

16,599. Silver, D., and Silver, C. T.
Sept. 4.

Horse &c. clippers.—Relates to methods of varying the pressure on the central spring finger of the operating lever; three methods are described and illustrated in the Specification. Relates also to methods of supporting the rear end of the operating lever and connecting it with the vertical pivoting piece; eight methods are described and illustrated. The central spring finger 18, Fig. 1, which may be fixed or hinged to the lever 11, is acted upon by a screw 17 which may bear upon it in various ways. The rear end of the lever may be supported by the vibrating bracket 7, or by an extension of the casing, or by a bolt through the casing. The bracket may be a separately pivoted piece, as shown in the Figure, or may be an arm of the vertical pivoting piece 13. The lever 11 may pass through the vertical pivoting piece 13, or *vice versa*, or the lever may be forked to embrace it. Pressure on the lever 11 is effected by a screw cap 5 which may act upon the pivoted piece 13, or on a separately mounted piece. Where the pressure is communicated through the piece 13, the latter may be provided with a ball 12 or an arm, or a flat face to bear against the lever. As regards flexible shafts, the object is to make the tube or casing of the shaft

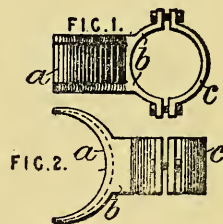
proper more flexible in one direction than in another at right angles to it. The tube or casing is made with a "backbone" of steel strip or wire 92, Fig. 14, or a flexible tube is formed with a number of slots 108, Fig. 21, on each side of the tube. The tube may be in sections, as shown in Fig. 14, or may be helical, and the "backbone" may be secured by clips &c.

16,908. Inglefield, E. F., and Davis, A.
Sept. 8.

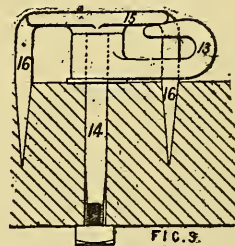
Fastening.—Improvements in Specification No. 14,633, A.D. 1890. Instead of having two hooks with angular gaps *b* by which they may be coupled when held at right angles, there is a hook *b* and a link A with a reduced part *a* which acts in the same way. Various forms of gaps, some curved and others angular, are described; in some of them the part *a* may be open like the part *b*. The fastening is applicable to harness straps.

16,950. Hamilton, G. Sept. 8.

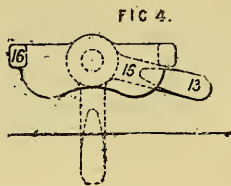
Whip sockets.—Relates to fittings for securing the whip socket to the vehicle. Figs. 1 and 2 show two views of one form of fitting, consisting of a channelled plate *a* and clamp *b*, *c*. Two of these fittings are required for each whip socket, the straps of which are buckled in the groove or channel shown. The clamp *b*, *c* may be replaced by either one or two plates, with holes for wood-screws &c. In another modification, a pair of channelled plates *a* are united by a vertical bar, from the centre of which projects the plate &c. for fixing to the vehicle.

**17,271. Jarvis, J.** Sept. 14.

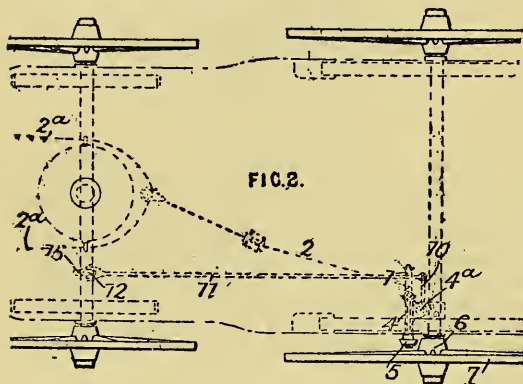
Fastening.—Relates to hooks for fastening traces and breeching. The hooks 13 on the shafts of carts and wagons are mounted to swivel on pins 14,



and accidental engagement or disengagement of the harness is prevented by mousing plates 15, which may be integral with the bolts 14 and are further fixed by spikes 16.



17,724. Thomas, L. P. Sept. 20.

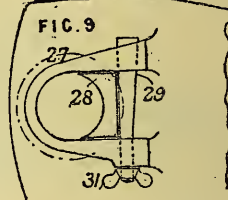
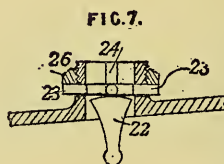
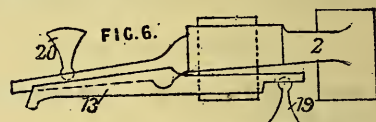
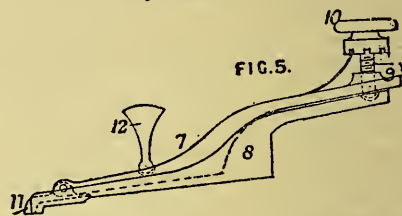
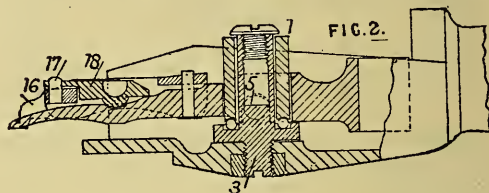


Stopping runaway horses.—The object is to curb runaway and other horses attached to vehicles by drawing down their heads. Fig. 2 shows one form of apparatus in connection with a four-wheeled vehicle. Extra reins 2^a are connected to the horse and to a cord 2 wound upon a drum 1 which is fixed to a spindle carrying a friction wheel 5. The spindle is supported in a bearing 4 pivoted at 4^a and rigidly connected to a lever 10. By this lever the wheel 5 is put into contact with the hub 6 of the road wheel 7 so as to be rotated by it and wind up the cord 2. The lever 10 is connected by links &c. 11, 12, 15 to the usual brake lever, or to a special hand lever within reach of the driver or passenger. In a modification, the drum 1 turns on the carriage axle and is formed as a friction clutch. It is operated by an eccentric and a helical spring.

17,825. Bown, W., Capewell, G., and Flavel, J. W. Sept. 22.

Horse &c. clippers.—Relates to various details in these machines. The axis, pivot, or support 1, Fig. 2, swivels, oscillates, or rocks, either separately or in combination with the pin 3. The lever 2 may work on pins 5 carried by the piece 1, or may be simply slotted for it. The friction on pivot 1 is reduced by ball bearings, as shown, or by oscillating pins. Oscillating pins are also used to reduce the friction of the driving eccentric. The tension of the cutting plates &c. is regulated by a screwed pin 9, Fig. 5, and nut 10 in connection with the pressure bar 7 or the vibrating lever 8.

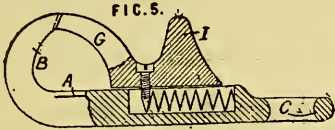
The pin is formed so that the bar can rock upon it. The bar 7 carries at its front end a pivoted piece 11 which rests on the cutters and lever 8. The bar 7 bears against an oscillator 12 arranged



above it. This oscillator is described in Specification No. 1107, A.D. 1885. Tension may be otherwise regulated by two or more oscillators in combination with two or more pressure bars or levers. The lever 2, Fig. 2, as described in Specification No. 16,029, A.D. 1890, is extended to bear on the centre tooth of the cutter and has an independent cutter carrier hinged &c. to it which, when pressed down, forces down the lever also. In Fig. 2, the cutter carrier 16 pivoted to the lever 2 has a piece 18 which communicates the pressure through the pin 17. In another form, Fig. 6, the lever 2 is pressed down upon the cutter carrier 13 by an oscillator &c. 20, and the rear end of the cutter carrier is supported by one or more oscillators &c. 19. Or the cutter carrier may be dispensed with. The seat of the oscillating pin 22, Fig. 7, may be formed by a washer, with radial arms 23 taking into slots in a screwed sleeve 26, outside which a nut 24 screws so as to bear upon the arms. Alternative arrangements are described. The tension nut 27, Fig. 9, is locked by making its socket with a movable side 28, which can be forced in by a cottar 29 and nut 31, or by splitting the socket and suitably drawing the parts together.

18,041. Gregg, J. W. Sept. 26.

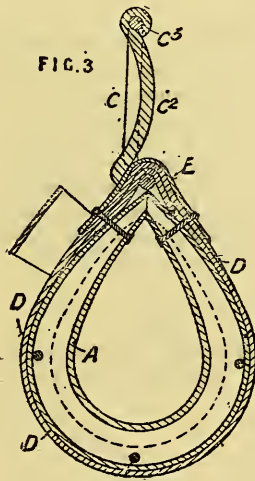
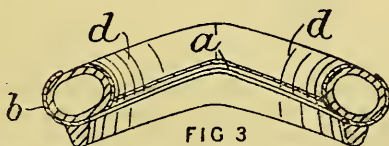
Saddles, collars, and other harness.—Consists in forming horse collars, riding saddles, and cart horse gear of a rubber or like material, which can be distended by pumping air thereinto through a suitably arranged opening.

18,142. Gamble, S. L., and Barton, R. Sept. 27.

Fastening.—The fastening for traces, breeching, &c. consists of a hook B the mouth of which is closed by a sliding spring tongue G. The hook B is on a base plate secured to the vehicle by a bolt passing through the eye C, or by bolts through lugs, or by other means. The tongue G is operated by the thumb piece I, and is held against the base plate by flanges, of which one A is shown.

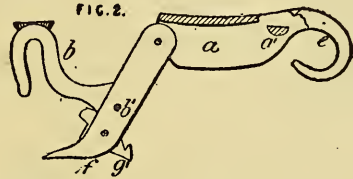
18,429. Hart, A. E. Oct. 2.

Tugs, shaft.—The Figure shows a longitudinal section of the tug which consists of a buckle C and a leather loop. The buckle tongue C² is hinged at the top C³. The leather loop consists of a tube A stuffed with scrap leather and an outer covering of black leather D bent over at the top, as shown. The stitching of the tube A is arranged on the outer side so as not to be worn by the shaft. Metal strips are riveted to the edges of the leather D and a metal strip E is riveted at the top.

**18,745. Thompson, W. P., [Pope, C.]** Oct. 6.

Collars, neck.—The Figure shows a horizontal section of the collar which is strengthened by a

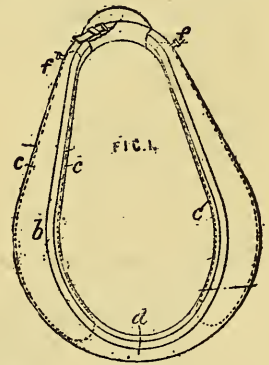
metal casing *b* and padded by rubber pads *a* filled with compressed air and covered with strips of hide *d*.

18,843. O'Connor, J. L. Oct. 7.

Fastening hames. Fig. 2 shows a section of the fastening which is used in connection with a chain, one end of which is hooked to one hame while the other end engages with the hook *b*. The hook *e* engages with the other hame. The hook *b* is pivoted at *b'* to the lever *f*, itself pivoted to the body *a* of the fastener. By closing the lever *f* the hooks are brought nearer together and the hames are thus tightened round the collar. The lever *f* and body *a* are secured together by a catch *g*¹ engaging with the pin *a*¹. In a modification, the hook *e* is carried by a slotted strap adjustably secured in the body *a* by a spring catch. In this form the body may carry a hook for the breast-strap or martingale &c.

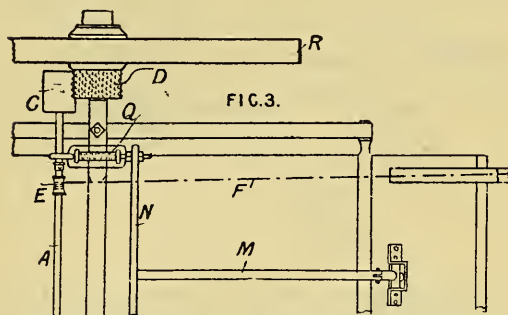
18,959. Ingels, L. Oct. 10.

Collars, neck.—The roll *b* and lower part *d* are made as usual; but the usual padding at the sides is replaced by inflated bags *c* of rubber &c. provided with suitable tubes *f* with valves. The roll *b* may be of metal to give extra stiffness.

**19,201. Gardner, A.** Oct. 12.

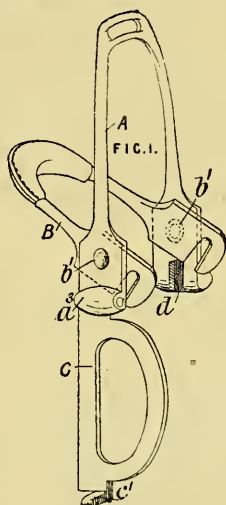
Stopping runaway horses.—The horse is stopped by reins attached to the vehicle. Fig. 3 shows an underside view of part of the vehicle, one rein *F* being shown in dotted lines. The reins are wound on drums *E* on a shaft *A*, which may be rotated by the road wheels *R* by putting it into gear with them. In the Figure, drums *C* on the shaft *A* gear with the roughened hubs *D* of the road wheels. The shaft *A* is moved laterally by a treadle &c., links *M*, and cross bar *N*. Springs *Q* may hold the shaft *A* normally in engaged or disengaged position. This apparatus may serve also as a brake. A large loop is formed in the reins

near the bit, and one side of this loop is elastic to prevent a sudden jerk from coming on the horse's mouth.

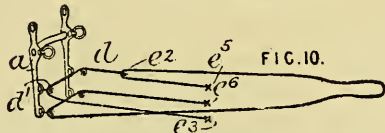
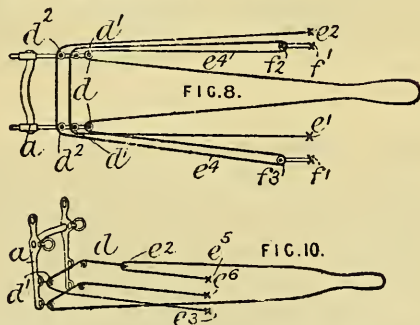


19,498. Carrington, H. Oct. 17.

Stirrups. — The tread C is hinged at a^3 to one leg of the outer bow A, and is formed, as shown at C', to lie in the slot d in the other leg of the bow. The inner bow B is made with side pins b^1 turning in bearings on the outer bow, and riveted over on the outside. The lower ends of the inner bow B are hooked to engage under the tread C in order to hold it in position.



19,823. Sumner, J. Oct. 21.

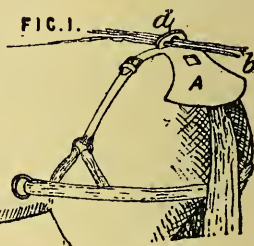


Bits and bridles. — The object is to restrain vicious animals, to break in colts, &c., but the harness can be used for riding and driving purposes generally. The curb reins, or a special rein or reins, are passed through loops on the bit, and attached at their end or ends to the saddle or other

fixed point. These reins may be combined with the martingale, if desired, and may be used as a bearing rein. Figs. 8 and 10 show two ways of arranging the curb rein. d, d', d^2 are loops or rollers carried by the bit a . In Fig. 8, f^2, f^3 , and in Fig. 10, e^2 are other rollers. The reins are connected to the saddle &c. at e^1, e^2 and f^1 , Fig. 8, and at e^3, e^5, e^6 , Fig. 10. In a modification, the doubled parts e^1 , Fig. 8, are dispensed with, and there are only two rollers on each bit cheek, and in another modification there is a second roller similar to e^2 , Fig. 10, for the other side of the rein.

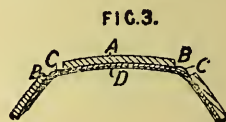
20,058. Blake, B. Oct. 24.

Breeching, attachment for. The attachment consists of a plate A to prevent the tail from rising and getting over the reins b . The plate may carry guide loops d for the reins, as shown.

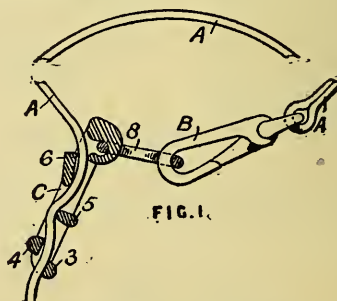


20,111. Carr, H. Oct. 25.

Knee caps are formed with transverse hinges to enable them to bend. Fig. 3 shows a section of the front of the knee cap. The blocked leather part A is cut across at B, strengthening strips C are introduced, and a leather lining D is provided.



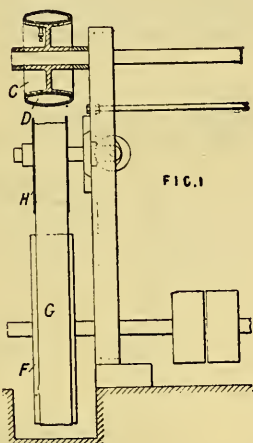
21,047. Barnes, J. E. L., [Conger, C. A. and Spaulding, A.]. Nov. 6.



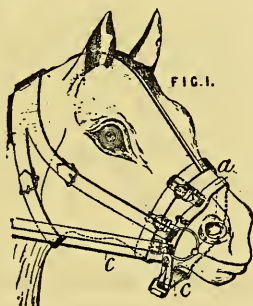
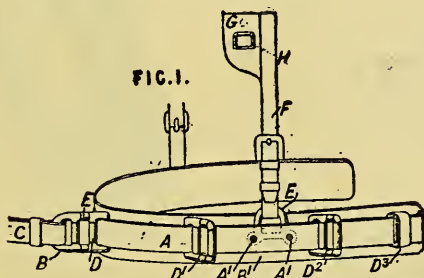
Fastening. — A loop is made in the hitching strap for securing the horse to a post &c. by means of a snap hook B and a ring 8 carried by an adjustable clamp C. The clamp consists of a rectangular frame with cross bars 3, 4, 5, 6 (shown in section), between which the strap A is threaded, as shown.

21,407. Parkes & Gnosill, Limited, and Parkes, J. Nov. 10.

Grinding and polishing hames. It comprises band apparatus and disc and wheel apparatus. In the band apparatus the polishing band G is led under the driving pulley F and over a supporting pulley C having a pneumatic or cushion tyre of other description D. A tightening pulley H may be provided or the pulley F may also be fitted with a pneumatic tyre. The polishing is effected at the part where the band passes around the pulley C and may be performed in the direction of the length of the article. In the disc and wheel apparatus the tyre of the pulley C may itself be surrounded with abrading or polishing material.

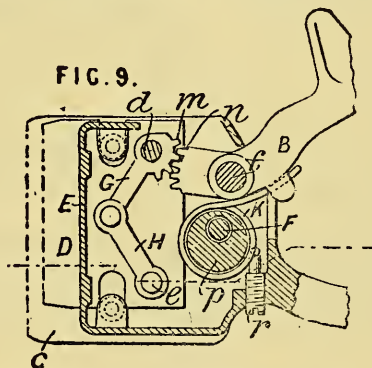
**21,726. Boulton, A. J., [Stephan, J., and Kretschmar, A.]. Nov. 14.**

Bridles.—A horse is broken-in or prevented from running away &c. by a hinged noseband *a* which may be drawn tight by means of a strap *c* so as to press painfully on the nose and obstruct the breathing.

**21,898. Leckie, J. Nov. 16.**

Fastening.—The Figure shows a breast collar to which the invention mainly relates. The pole strap C is secured to the layer A by a link B provided with friction rollers D, E, F. The layer A

also secures loops or guide rings D¹, D² with anti-friction rollers. D³ represents a leather loop with a roller. The continuous trace, similar to that described in Specification No. 3370, A.D. 1891, passes between the rollers on the links B, D¹, D², D³. The neck strap F is attached to the layer A by a loop E which is riveted through holes A¹ and sewn through the slot B¹. The neck strap F carries the neck pad G to which is fixed the loop H with anti-friction rollers for the neck bar strap. The loops may also be made of leather &c. with suitable rollers and may be attached to any part of the harness. Modifications are described, in which the lower roller of the loops B, D¹, D² are dispensed with. The loops may be provided with base plates for fixing. There may be two loops B connected by a hinged or other metal bar or by a buckled strap upon which a ring on the pole chain runs freely.

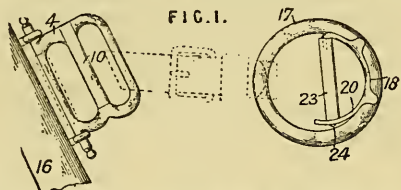
22,254. Tower, J. J. Nov. 21.

Horse &c. clippers.—The chief object is to obtain a double stroke of the cutter to each stroke of the handle. Fig. 9 shows a horizontal section of one form of the clipper for hair or wool. The toggles G, H are pivoted respectively at *d* to the cap plate E and at *e* to the cutter D. The toggle G is formed with teeth *m* to mesh with teeth *n* on the end of the handle B pivoted to the casing at *f*. The necessary pressure between the cutter D and comb C is obtained by a bolt F and nut. The handle B is returned to its open position by a spring K which bears at one end against the handle and at the other against a set-screw *r* and is coiled round a hub *p* projecting from the cap plate E. In a modification, the teeth *m*, *n* are replaced by a single tooth taking into a socket. In another modification, the end of the handle B is connected by a link either to the joint pin connecting the toggles or to an extension of the toggle G beyond its pin *d*.

22,552. Flack, M. C. Nov. 24.

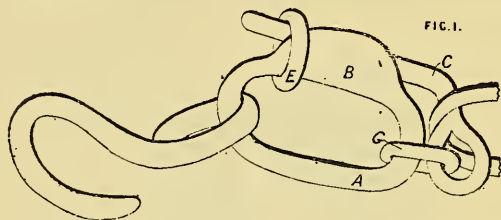
Terrets and like guide rings.—The object is to prevent flat reins from twisting and at the same time to enable the reins and their attached buckles to be readily drawn through the rings. The ring 17

or the frame 4 attached to the hame 16 has a swinging cross bar 23 and 10 respectively. The cross bar 10 is pivoted to the frame at its upper end and is pressed down by an internal spring so



that its lower end enters a shallow socket. The cross bar 23 is pivoted at its upper end to the metal clip 18 and is provided at its lower end with a pin 24 which fits into a hole in the spring end 20 of the clip.

22,996. Elliott, J., and Rogerson, A.
Nov. 30.

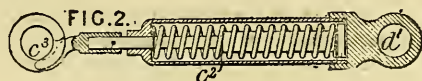


Fastening pole chains &c. The hook proper C is connected to the link A by the link G and is held in the closed position against the enlargement B by the link E. The hook is released by pulling back the link E.

23,028. Desprez, E. M. Nov. 30.

Lining material.—Relates to a compound woven and rubber fabric applicable for use as harness linings. Sheet gutta-percha, caoutchouc, or similar material is covered on one or both sides with a fabric composed of vegetable or animal textile material or of wire, the whole being subjected to pressure while hot. Strips cut from the fabric, after immersion in warm water, are wrapped round or moulded upon any required object.

23,282. Aspinall, H. E., and Barwell, W.
Dec. 4.



Fastening.—Relates to a spring attachment for traces. To facilitate the starting and drawing of a vehicle the traces are coupled to it by means of spring devices such as shown. The trace is attached to the hook c^3 and the eye d^1 to the vehicle, or *vice versa*. A shoulder c^2 on the spindle prevents the latter being drawn too far out through the breaking of the spring or from other

causes. The device may be modified by forming the eye d on the closed end of the casing and bringing the spindle through the cap, and a volute spring or block of india-rubber may be substituted for the helical spring shown.

23,572. Wolseley Sheep Shearing Machine Co. and Austin, H. Dec. 7.

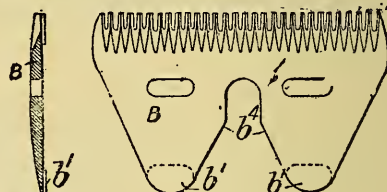


FIG. 3.

FIG. 2.

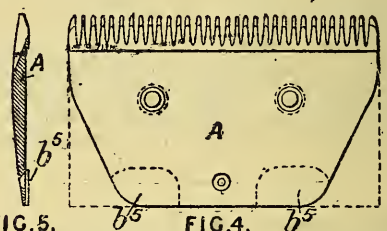


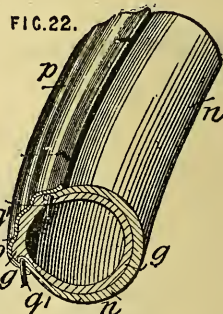
FIG. 5.

FIG. 4.

Horse &c. clippers.—Relates to the form of the cutter and comb plates. Figs. 2 and 3 show a plan and section of the cutter plate B, and Figs. 4 and 5 corresponding views of the comb plate A. The plates bear against one another along the line of teeth and at points b^1, b^1 , Fig. 2, and b^5, b^5 , Fig. 4, so that each half of the plate B has a sort of triangular bearing which ensures greater evenness with less pressure. The end of the operating lever fits into the slot b^1 , Fig. 2.

23,868. Bailey, R. D. Dec. 12.

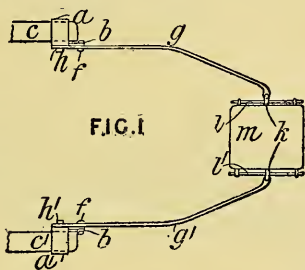
Pads and padding.—Rubber &c. bags filled with air, gas, or liquid are attached to neck and breast collars, harness and riding saddles, knee caps, horse-boots, girths, breeching, traces, &c. They are made strong, puncture proof, and readily removable. The bags or tubes may be strengthened by linen, hemp, hair, silk, canvas, or flannel, &c. combined with the rubber &c., and are made puncture proof by compressed cotton wool treated with resin &c., or by silk,



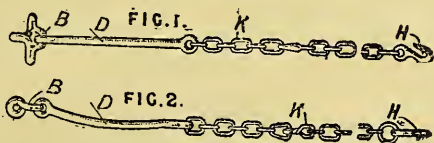
felt, spirally and otherwise woven wirework, corrugated or other sheet metal, &c. The bags are attached by laces, hooks, wires, &c., or by their natural expansion during inflation. The frames of collars and saddles for carrying these bags may be cast in a single piece of an aluminium alloy or stamped in a single piece of iron, steel, &c., or these frames may be strengthened by metal. Fig. 22 shows an outer rubber tube *n*, and an inner tube *g* attached to a metal rim *p* by wires *q*¹. The pads may be covered with flannel, felt, cork, &c. for the absorption of sweat, and the surface of the pads may be corrugated for ventilation. Fig. 35 shows a hoof pad with an inflating nozzle *m*, and a plate *l*² of rubber with canvas and wirework embedded therein to prevent puncture of the inflated bag *l*¹.

23,871. McLardy, J. E. Dec. 12.

Nose bags, supporting. The open shallow nosebag or food container *m* is supported from the shafts *c*, *c*¹ by arms *g*, *g*¹. These arms are attached to the loops or sockets *a*, *a*¹ fitting over the shafts by means of studs *h*, *h*¹ and bolts *f* which take into slots in the arms. The bolts *f* also take into curved slots in the plates *b*, so that the bag may be adjusted in any position. The bag is hooked to bars *l*, *l*¹ suspended by hooks *k* from the arms.



24,010. Baumann, R. Dec. 13.

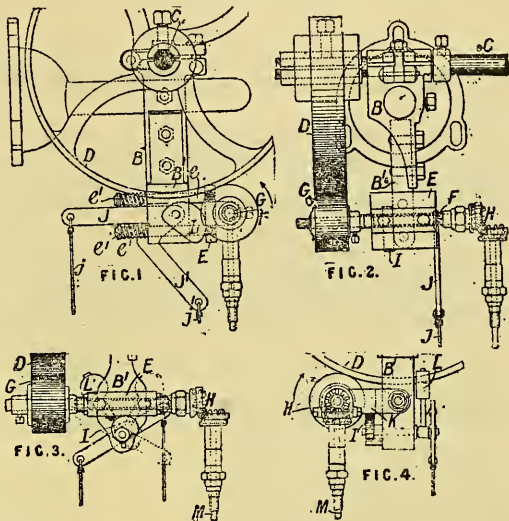


Traces.—The trace for freight carts &c. consists of a rod *D* shaped to fit the fore quarters of the animal, and connected at one end to an eye *B* for attachment to the collar, and at the other end to a chain *K* terminating in a hook *H*. The chain is passed through an eye in the cart, and the hook is hooked into that link which gives the right length of trace.

24,020. Burgon, C., and Burgon, H. Dec. 13.

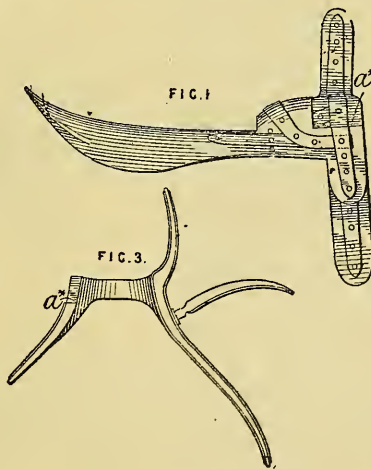
Horse &c. clippers.—Friction gearing for driving sheep shearing and other machines. The friction wheel *D* on the line shaft *C*, Figs. 1 and 2, drives a pinion *G*, a countershaft *F*, the bearings *E* of which are supported by two arms *e*, *e* passing

through a hanger *B*¹ bolted to the bearing *B* of the line shaft, and carrying springs *e*¹, *e*¹ for pressing the pinion into gear. The pinion is moved out of gear by a cam *I* bearing upon the



back of the bearing *E*, and operated by arms *J*, *J*¹ and rods *j*, *j*¹; the direction of adjustment is tangential to a circle concentric with the wheel *D*. In Figs. 3 and 4, the countershaft bearing *E* is mounted on a pivoted arm *K*, supported by a cam *I* provided with operating levers, and a throw over weight *L*. In another modification, the bearing *E* is supported by an arm pivoted above the bearing *B*. The countershaft drives the vertical flexible shaft *M* by crown wheels *H*.

24,027. Symons, J., and Clarke, T. U. Dec. 13.



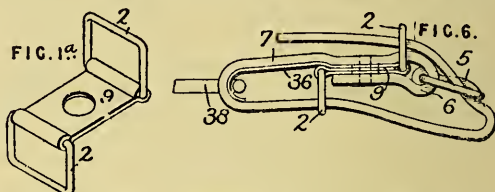
Saddles.—Relates to the trees of side saddles, the object being to prevent the objectionable pressure

of the off-side of the tree at the withers on the backbone of the animal. This part of the tree is cut away as shown at *a** in the two views, Figs. 1 and 3, or the part is hinged or made flexible, or recessed.

24,159. Reed, J., and Wyatt, G. P.
Dec. 15.

Fastening.—Metal loops 2, Figs. 1^a and 6, for the straps of harness are attached by a plate 9 to which the strap is riveted. The plate 9 may carry a loop 2 at each end as shown in Fig. 6, or at one end only, or there may be two loops at one end. The loops may be fixed or movable, and the plate may be perforated with a large rivet hole, or with a number of small holes, or may be unperforated, the rivet in this case passing at one side of it.

The hole is considerably larger than the rivet for it, so that a riveting machine may be used without difficulty. The plate may be replaced by a wire frame. In Fig. 6 the strap 6, 7 is shown carrying

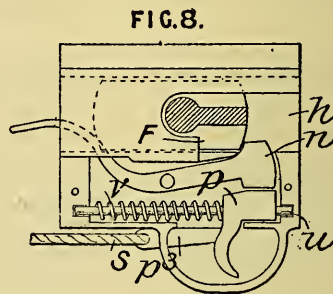
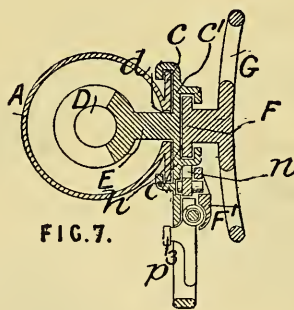
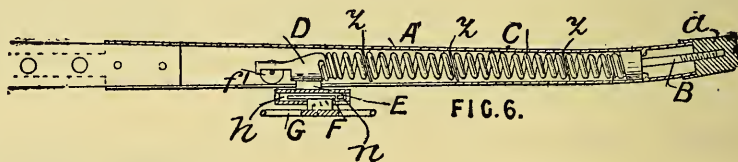
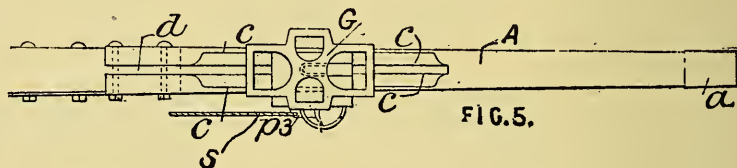


a buckle 5, and protected from the wear of the hame loop 38 by a hooked extension 36 of the plate 9. In another form for traces, the plate carries a buckle at one end, a loop at the other, and a number of intermediate loops along its length.

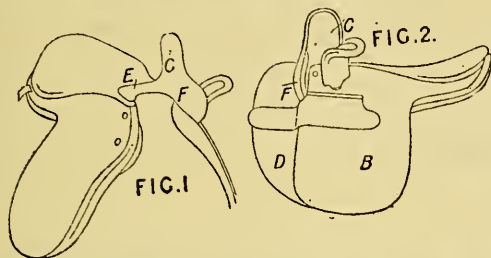
24,399. Norwood, J. E. Dec. 19.

Runaway horses, releasing.

—The front end of each shaft consists of a metal tube *A* closed by a cap *a*. The tube is slotted on the inner side, and carries vertical flanges *c, c* on which can slide a plate *c'* secured by a stem *E* passing through the slot *d* to a piece *D*, to which is connected one end of a helical spring *C*, the other end of which is secured to a bolt *B* screwed into the cap *a*. The pin *D* has a roller *f*¹ bearing on the tube on both sides of the slot *d* so that it may move, freely, to and fro in the tube. In front of the plate *c'* is formed a slideway *h* as clearly shown in Figs. 7 and 8, and in this slideway is held a plate *F* made in one with a 4-loop piece *G*, to which the belly-band, back band, trace, and breeching of the horse are fastened. The plate *F* is held in position by the projection on the end of a pivoted lever *n*, Fig. 8, which is itself maintained in the position shown by a trigger *p* which can be pulled along a rod *u* against the spring *v* by means of a cord *S* made fast to a tail *p*³ on the trigger. The lever and trigger are held in place by a front plate *F*¹, Fig. 7. When the cord *S* is pulled from the vehicle or otherwise, the trigger is pulled from beneath the lever *n* so that it falls and frees the plate *F*, which is then drawn out of the slideway *h* so that the horse is freed from the vehicle. The horse can thus be readily set free should it run away.



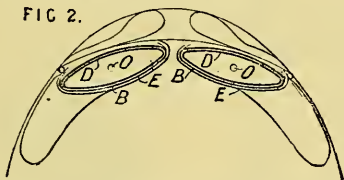
24,703. **Wilton, H. S.** Dec. 22.



Saddles, ladies'. The fore part of the safe B, Fig. 2, especially in "cut back" saddles, is cut away, and the rider's leg rests upon an extension D of the panel. The wither flap E, Fig. 1, forms an extension of, or is attached to, the near head C. Where the grip piece, described in Specification No. 15,215, A.D. 1892, is used, the three parts E, C, F form practically one piece.

24,819. **Meyer, J.** Dec. 23.

FIG. 2.



Saddles.—Relates to pneumatic bags to serve as padding. Fig. 2 is a transverse section of the saddle which is provided with inflated cushions to bear on the animal's back. These cushions may be formed of rubber &c. bags enclosed in a wrapper of cloth &c.; but it is preferred to form them of tubes D of rubber cloth arranged side by side, and provided with holes o to communicate with one another. These tubes are enclosed in a wrapper B of cloth or canvas, outside which are sheets E of leather. Suitable stop-cocks for inflating are provided.

24,917. **Skinner, D. M.** Dec. 28.

Reins.—The power of driving reins is increased by passing them through fixed or swivelling loops

at the ends of short straps attached to the bit, and then carrying them back to the saddle, where they are attached. In the form of loop shown, the rein



passes between rollers at B, B, along a roller at D and over a roller at A.

25,022. **Hottelart, V., and Hottelart, L.** Dec. 29.

FIG. 2.

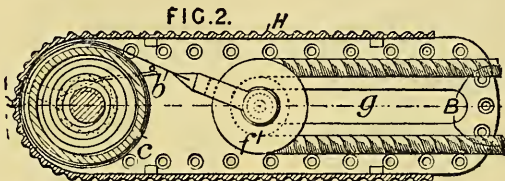


FIG. 5.



Bridles, bearing reins for. An extra bearing rein is attached at one end to the highest point of the ordinary bearing rein, and at the other end to a box fixed on the crupper or saddle. The box contains a spring upon which the bearing rein pulls, the object being to prevent horses from falling by giving them a support through the bit. Fig. 2 shows a horizontal section through one form of the box above mentioned. The box H contains a spring drum c attached by a coiled band b to a pulley f' over which runs the bearing rein B. The axle of the pulley runs in slots g in the box, which limit its motion. The other or free ends of the bearing rein are attached to the ordinary bearing rein by eyes, Fig. 5, the shank of which consists of a tube wider at one end than the other, so as to hold the knot on the rein. The eye proper v' may be formed in a piece with the end of a conical tube. In a modification of the box, Fig. 2, there are two cylinders telescoping together against the action of a helical spring.

A.D. 1894.

127. James, D. W. H. Jan. 2.

Hobbles.—The hobble consists of a rope and one or more nooses for the legs. The noose consists of a length of rope *c* covered with rubber &c., and provided with loops *a*, *b* at the ends. The loop *b* preferably has a metal eyelet. For throwing animals, four of these hobbles are used, one of which has an eye *e* for the free end of the rope *d* to run through.

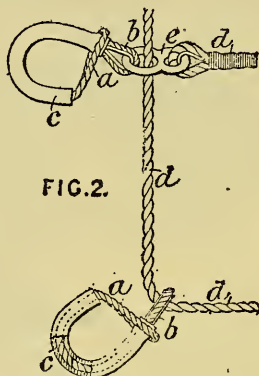


FIG. 2.

131. Felker, M. O. Jan. 2.

Whips.—Figs. 2 and 3 show longitudinal sections of a whip at two different parts of the stock. The stock is formed of tapered spiral elastic strips *A*, *B*, preferably two in number and preferably of steel, outside which are glued wooden strips *F*¹, preferably rattan, which are covered with a plaited covering *G*. The spiral *B* terminates in a tip *E* of raw hide or whalebone. The tip is fixed to the spiral *B*, and the latter is fixed to the spiral *A* by slightly uncoiling the embracing tube and letting it spring back.

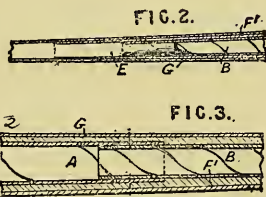


FIG. 2.

FIG. 3.

556. Barrat, C. W., and Carter, P. Jan. 10.

Stirrups.—The treads of riding stirrups are provided with studs or cushions *c* of rubber or the like, which are retained in place by a plate *d* formed with countersunk holes for the studs, and fixed by screws *e*. The plate *d* may be fixed below the tread, in which case the perforations for the

studs are formed in the tread itself. The studs may be formed separately, or they may be formed as projections on a strip of rubber.

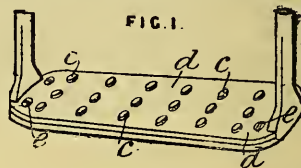


FIG. 1.

621. Thacker, R. E. Jan. 11.

Saddles, harness and like. The skirts *B* are strengthened and attached to the flaps *B*¹ by a metal plate *A*, *A* secured to both skirts and flaps by pins or bolts *E*. The plate is formed with an eye *C* for the shank of the terret ring *D*, and may have two flanges to support the skirts at the point where the back-band passes beneath it.

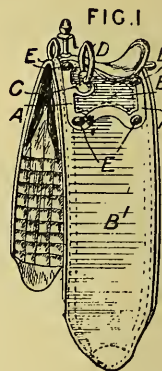


FIG. 1.

948. Carrington, H. Jan. 16.

Stirrups.—Fig. 1 shows an elevation of the safety stirrup with part in section. The legs *A*¹, *A*² are jointed at *c*¹, *c*² to the side bars *b*¹ of the tread *F*, and the squared ends of the legs bear against a spring *D* riveted to the tread. The legs are connected by a pin and socket joint *a*². If a fall occurs, the stirrup opens out till the parts *A*¹, *F*, and *A*² are approximately in a straight line.

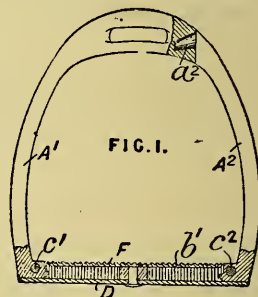
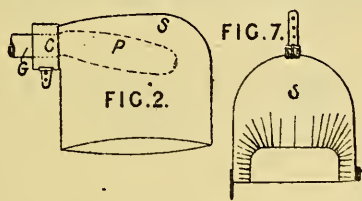


FIG. 1.

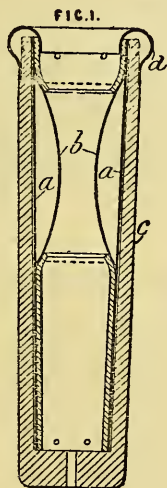
962. Perrinon, P. Jan. 16.



Stirrups, attachments to keep the feet warm. Suitably shaped coverings S, Fig. 7, for the feet are provided. These are constructed of any suitable material, and lined with cloth, wool, fur, &c.

1410. Jeffries, E., Jeffries, J. G., and Jeffries, A. Jan. 23.

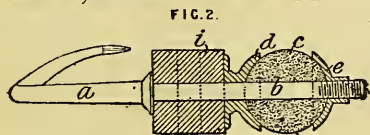
Whip sockets.—Consists of a shell and gripping mechanism which may be placed in any outer cover or casing. The shell is made of pulp compressed to the desired shape. The spring may be of a rubber tube *b*, Fig. 1, as described in Specification No. 11,288, A.D. 1887, or any other suitable spring for gripping the whip handle. The spring is contained in an inner shell *a* which fits in an outer case *c* made of celluloid or the like. The spring with its shell is held in the outer casing *c* by a cap *d*, secured by screws, cements, &c. In modifications, a different form of cap is used for holding the spring in the outer case. In some cases, the bottom of the outer case consists of a plug which may be unscrewed.



1923. Withers, T. G., and Withers, S. Jan. 29.

Spurs.—The knobs for the attachment of the straps and buckles are cast or forged in one piece with the body of the spur.

1975. Luck, M. S. Jan. 30.



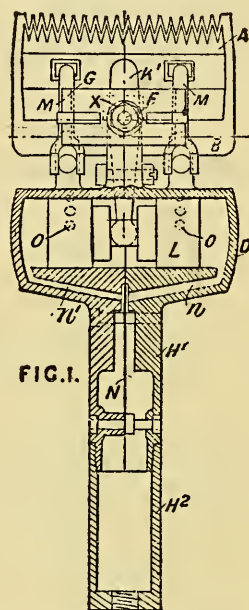
Fastening, trace-hooks and eyes for. The shank *b* of the trace hook *a* or eye is acted on by a rubber

spring *c* held between cups *d*, *e*, as shown. A spiral spring may be used instead of the rubber spring *c*. The spring lessens the shock at starting and equalises the traction.

2014. Kings, T. W. Jan. 30.

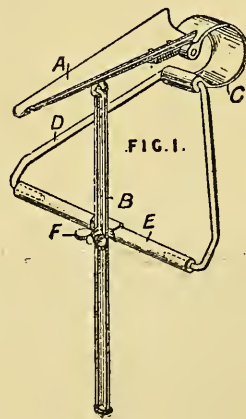
Horse &c. clippers.

—The upper cutter A is worked by a lever K¹ pivoted at F and oscillated by a piston L working within a cylinder D to which steam or compressed air is supplied through the handle H¹ and valve chest H¹, in which is the vibrating diaphragm valve N, which alternately closes the channels *n*, *n*¹ leading to the cylinder. The air &c. escapes through holes O, O uncovered by the piston itself. The ends of the cylinder may be closed by cover plates and the valve chest H¹ may have a cover plate, or the cylinder and chest may be made in two equal parts as shown. The upper cutter A may be pressed down upon the lower cutter B by a nut X pressing on a plate G bearing on arms M connected to the upper cutter A and to lugs on the cylinder D. The cutters may be held together by pins and nuts, or cottars.



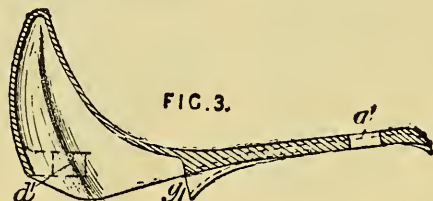
2357. Lavine, J. F. Feb. 3. [Date claimed under SEC. 103 of PATENTS &c. ACT, 1883 September 16th, 1893.]

Tails, adjusting for cutting.—The crupper is passed through the curved plate C to which the tail carrying plate A and the triangular frame D, E are pivoted. The frame rests against the horse, and is provided with a nut F for clamping the slotted bar B by means of which the inclination of the plate A is regulated. The device can be folded when not in use.

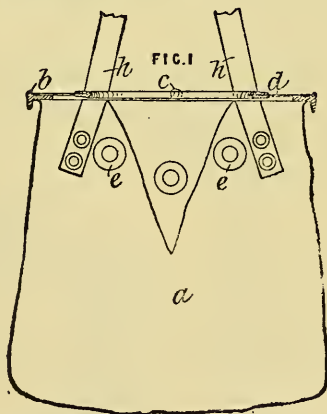


2767. Goddard, J. Feb. 8.

Traces and the like are made of flexible wire rope. There may be a core of non-metallic material and there may be a covering of leather, fabric, &c. Shackles *d* or hooks &c. are secured to the ends of the rope *a* by suitable couplings *b*.

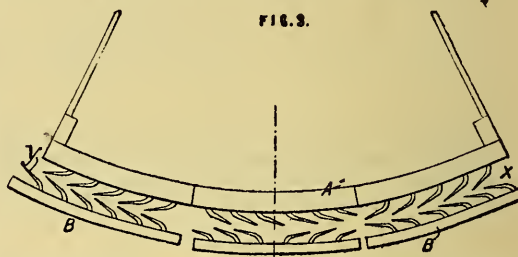
**3349. Wincer, A.** Feb. 16.

Saddles, harness. The cantle and seat of cab and other harness saddles are made in one piece of metal, as shown in section in Fig. 3. This is attached to the part beneath by a bolt taking into the threaded projection *d'* and by the bearing rein hook, the shank of which passes through the hole *a'*. The top edges of the skirts are fitted into grooves *g'* at each side. The "top making" of the saddle is dispensed with.

3734. Gray, F. Feb. 21.

Nosebags.—The bag *a* is secured to a metal frame *b* formed in two halves hinged together at *c* to enable it to be opened and closed as required. A ledge *d* with a central opening for the mouth of the animal is fixed above the frame for the purpose of preventing loss of food. Apertures or raised eyelets of rubber &c. *e* are provided for ventilation. The bag is suspended by a strap which passes over the head of the animal; another

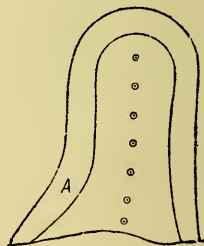
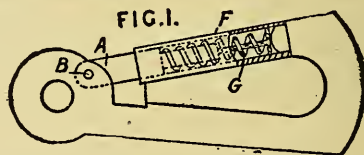
strap terminating in two branches *h, h* is secured to the centre of the first strap.

3920. Boulton, A. J., [Fistié, E.] Feb. 23.

Stuffing materials.—A portable apparatus for combing, picking, or tearing woollen and other stuffing materials, for the use of saddlers, upholsterers, mattress makers, coach builders, and others. A swinging frame *A*, provided with teeth, as shown, is suspended above a fixed frame *B* likewise provided with teeth, the height of the swinging frame above the fixed one being adjustable according to the nature of the material under operation &c. The material is fed in at one end *X* and, the swinging frame being reciprocated by hand, is delivered completely opened at the other end *Y*.

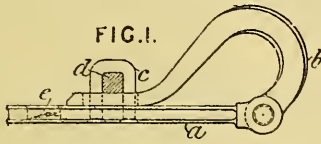
4165. Langdon, W. J. Feb. 27.

Saddles.—Relates to the application of an india-rubber tube *A* covered with serge and leather to the pommels of side saddles to prevent abrasion of the skin.

**4258. Wood, A.** Feb. 28.

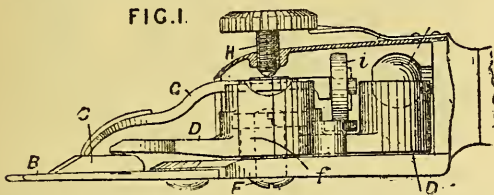
Fastening.—Relates to hooks or links for pole chains, traces, &c. for releasing fallen horses and for other uses. The mouth or opening of the hook or link is closed by a spring sleeve *F* sliding upon an arm *A* either hinged at *B* or rigid. The spring *G* may be either inside or outside the sleeve.

4387. **Hardingham, G. G. M.**, [*Hawkshaw, E. C.*]. March 1.



Fastening.—Relates to slip hooks &c. for attaching the traces and breeching to gun-carriages and road vehicles. The curved part *b* is pivoted to the bar *a* provided with an eye *c* for the trace &c. The point of the part *b* is slotted for the staple *c* which is fixed to the bar *a* and embraces a cross-bar *d* which locks the hooks for both traces. The bar *a* may have a hooked part pivoted at both ends, both parts being held by the same staple and cross-bar.

4634. **Burgon, C., and Burgon, H.** March 5.



Horse &c. clippers.—The Figure shows an elevation of the machine with the casing in section. The cutter driving lever *D* takes no part whatever in pressing the cutter plate *C* against the comb plate *B*. For this purpose a special pressure lever *G* is provided pivoted in the axis of oscillation of

the cutter driving lever *D*. The lever *D* is pivoted on the stud *F* surrounded by the screwed sleeve *f* and is notched to engage the lever *G*. The lever *D* engages with the cutter *B* and with the crank pin *E* in the usual way. The lever *G* is pressed down by the screw *H* carrying a steel ball at its point and is supported at the rear by a roller *i*.

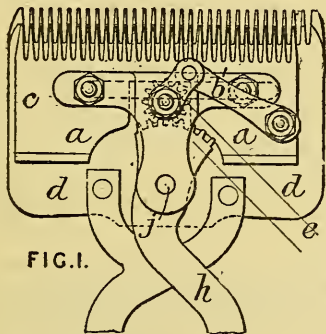
4881. **Davis, W.** March 8.

Whips.—The whip stock and lash are connected together, or the stock or lash is repaired by a tube, split or otherwise, or by two or more trough shaped strips *A, A'* which, as shown in the Figure, are bound at *E* to the lash *B* and connected to the stock *C* by the ferrule *D*. The binding *E* may be extended down as far as the ferrule *D*. The same method may be employed in repairing fishing rods and the like.

FIG. 3.



5185. **Harris, W. G.** March 13.

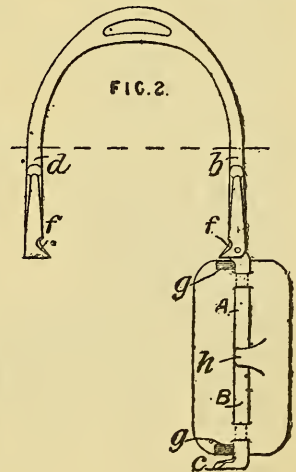


Horse &c. clippers.—The cutter plate *a* is so connected to one of the handles *h* that one full stroke of the handles in either direction produces two strokes of the cutter plate. The handle *h* is pivoted to the lower or comb plate *d* at *j*, and is formed with a toothed sector *g* to engage with a pinion *e* provided with a crank *c* connected to the cutter plate by a connecting rod *b*.

5907. **Dewsbury, A., and Vincent, H.** March 21.

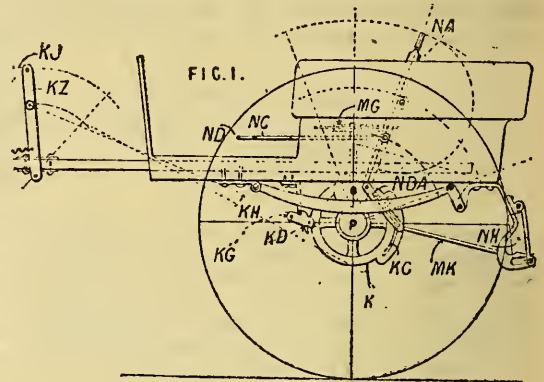
Stirrups.—The Figure shows an elevation of the safety stirrup after the foot of the rider has been released. The tread *B* is pivoted to a bar *A* hinged to one leg *b* and provided with a hook *c* to engage with a groove in the other leg *d*. A spring *h* bearing against a flat on the bar *A* prevents the tread from pivoting too readily. When in use the tread rests at *g, g* upon two projections *f, f* on the legs of the stirrup.

FIG. 2.

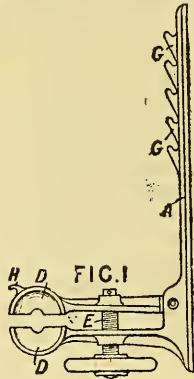


5974. Sayer, R. C. March 22.

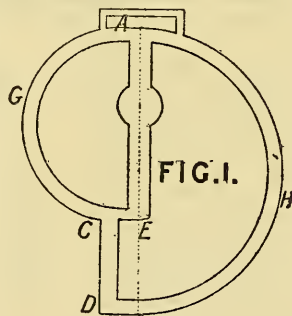
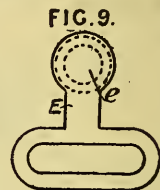
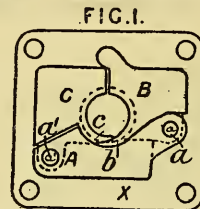
Stopping runaway horses, means for.—When the speed of the vehicle is excessive a centrifugal governor, driven by one of the vehicle wheels, rotates a ring K which is connected by links and rods to levers KZ pivoted to the shafts of the vehicle. These levers have reins KJ coupled to them and by means of these the horse is checked. At the same time one end of the slot KC in the ring K strikes a pin on a rod MK and applies a brake-block to each wheel. When the vehicle is left unattended a handle MG is rotated to bring a disc on the governor into driving contact with a similar disc on the ring K so that any movement of the vehicle, either backward or forward, rotates the ring and checks the horse and at the same time applies the brakes.

**6399. Wilson, G.** March 30.

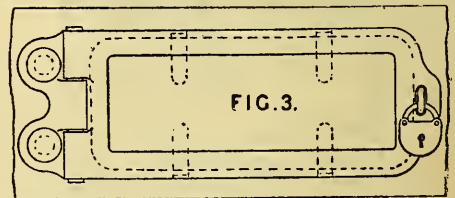
Cleaning and polishing, apparatus for.—Vices for holding bits and other parts of harness &c. while being cleaned. The bit &c. is held between grooved wooden jaws D, D adjusted by the screw E. Chains &c. may be stretched between the hooks G on the extension A and the hook H. The extension may be dispensed with.

**6546. Palmer, J., [Touch, W.].** April 2.

Bits.—The object is to so attach the reins that the pull upon the port is at the same angle whether the horse be ridden, driven, or led. The cheek bar A D is preferably made with a recess E C, and extensions A G C, A H D, preferably semicircular in form, are attached at one or both ends to the cheek bar. Reins may be attached to both extensions, the reins in the front extension resting in the recess E C D when the horse is being ridden or driven; but resting on the curved extension when the horse is being led.

**6694. Biebuyck, G.** April 3.

Stirrup straps, suspending.—Improvements on the inventions described in Specifications No. 18,194, A.D. 1889, and No. 2861, A.D. 1893. The stirrup-strap is attached to the piece E, Figs. 9 and 10, provided with a stud *e* to fit between the plates B, C, Fig. 1, which embrace the neck of the stud. The plates B, C overlap at *b, c* and are hinged at *a, a'* to a piece A on the plate X fixed to the saddle-tree. If the rider is thrown, the plates B, C open and release the piece E with the stirrup-strap.

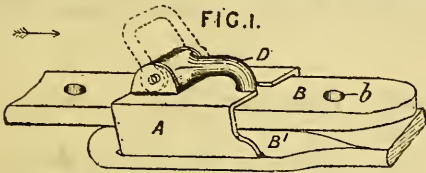
6839. Scott, J. W. April 6.

Dog collars.—A label giving the owner's name &c. is fixed to a dog collar by a casing or by a ring hinged or riveted &c. to the collar. The label is protected by a plate of transparent material.

6938. Brown, C. April 7.

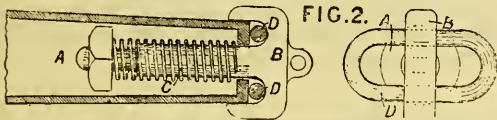
Fastening dog collars, harness back-bands (to enable fallen horses to be readily released) and other straps and bands. A case A carries one or

more spring tongues D engaging with the holes *b* in the strap B. The other strap B' is attached to the casing A either in the manner shown or by a



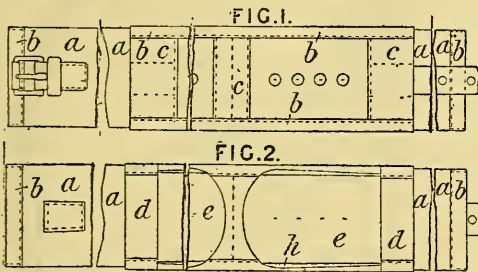
separate plate with projections engaging with the edges of the casing.

7986. Draydon, J., Draydon, J., and Draydon, G. April 23.



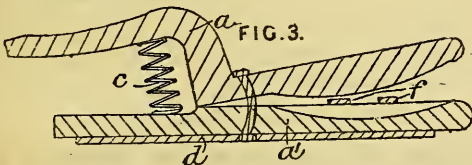
Fastening.—The trace chain D is attached to the end of the spreader A by a hooked T-headed bolt or clip B normally pressed inwards by the spring C. To release the chain the bolt is drawn out and turned through a right angle.

8092. Wilson, J. J. April 24.



Clothing for animals.—Relates to body rollers, of which Figs. 1 and 2 show, respectively, an upper and a lower view of one form. The band *a*, binds *b*, cross pieces *c*, back mounts *d*, and the facings *h* of the pads *e* are made of self-edged woven bands of jute, linen, wool, &c. The ordinary leather bindings are thus dispensed with.

8133. Seymour, B. April 24.

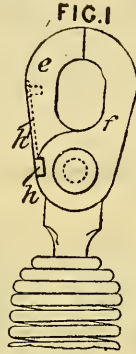


Rein holders.—Two arms *a*, *a'* are hinged together, and are pressed apart by the spring *c*, so

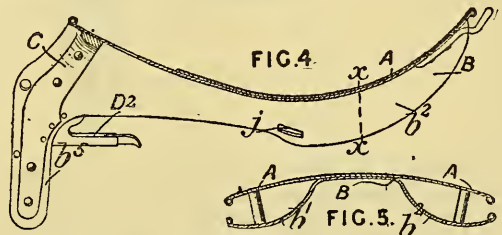
as to grip the reins *f*. The arms are fixed to the roof of a cab &c. by screws passing through the base plate *d*.

8596. Fris, A. A. May 2.

Fastening.—Relates to the hook, shackle, or link formed at the end or ends of the spring attachment for traces &c. to prevent sudden jars. The Figure shows one form of fastening, in which there is a fixed part *e* and hinged part *f*, which may be locked together by a cross piece *h* fitting into notches in the parts *e*, *f*. The piece *h* may be attached to a spring *h'* or be fixed by a set-screw. The parts *e*, *f* may meet in the line of pull, as shown, or the part *e* may be extended.



9175. Trees, J., and Brace, Windle, Blyth, & Co. May 9.



Saddles.—Improvements on the invention described in Specification No. 4725, A.D. 1892. Fig. 4 shows a longitudinal section of the saddle-tree, and Fig. 5 a transverse section on the line *x x*. The sheet steel or other metal seat *A* is riveted &c. to the sheet metal under part *B* formed with curved sides *b'*, *b''* and with points *b''*. The edges of the parts *A*, *B* are wired, as shown. The points are strengthened by an arched steel plate *C* to which the saddle bars *D''* are riveted. The parts *b'*, *b''* may be strengthened by longitudinal bars. In making up the saddle the seat plate *A* is covered with felt, cork, &c., and the leather seat and skirts, which may be blocked in one piece, are secured to the tree, preferably, by a strip of leather laced beneath the cantle. The flaps may be secured by screwing &c. and by metal clips passing through holes *j*. The panel may be fixed as in the above mentioned Specification.

9339. Kirkman, W. T. May 11.

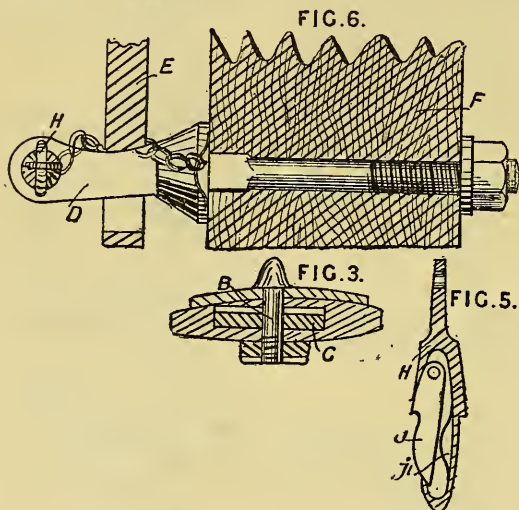
Fastening reins. The object is to enable draft horses to be left unattended. A strap or chain &c. is buckled at one end to the shaft &c., and at

the other end is fastened round the wheel and the reins, the ends of which are tied to some fixed part



of the vehicle. The reins are tightened by this strap if the horse moves forward.

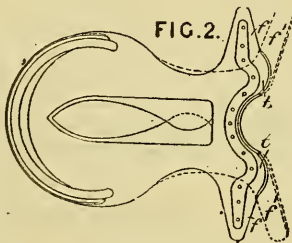
9929. Hughes, E. May 22.



Fastening backbands and traces to facilitate releasing fallen horses. Fig. 3 shows a transverse section of the harness saddle. The upper free end of the backband C on each side is secured in the channel in the saddle by the terret B or by a separate screw. The trace E, Fig. 6, is attached to the shaft F by an inclined stud or hook D, to which it is secured by a spring pin H. Fig. 5 shows a section of the pin with tongue J pressed out by spring j'.

10,358. Boulton, A. J., [Plüer, O. K., and Thörning, N. N.]. May 28.

Saddles, trees for. The part t is well arched and not thickly stuffed, and the end corners f are carried well back to give the horse freer movement. The old form of tree is shown by the dotted lines f'.



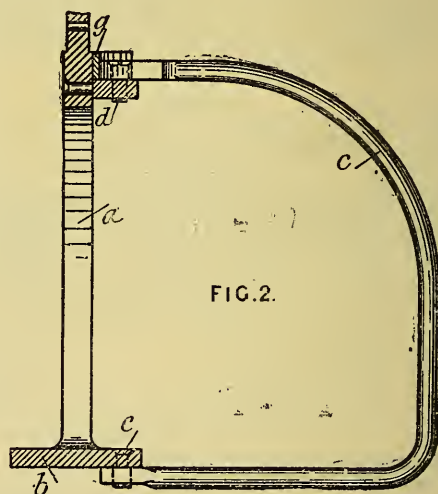
10,913. Bartram, J. June 5.

Clothing for animals.—Horse-rugs are knitted in a circular knitting machine instead of being woven.

11,192. Hall, W. June 9. Drawings to Specification.

Whips.—Relates to reducing the thickness of parts of small metallic articles so as to give them a tapered or other desired form. The invention is stated to be applicable, among other things, to making whip cores. Consists in treating the article with a liquid in such a way that different portions of the article are exposed to the action of the liquid for different periods of time. Generally, but not necessarily (except in the case when a neutral solution is employed), the action takes place in an electrolytic cell, so that the current assists the required action.

11,400. Thompson, W. P., [Ehler, P. L.]. June 12.

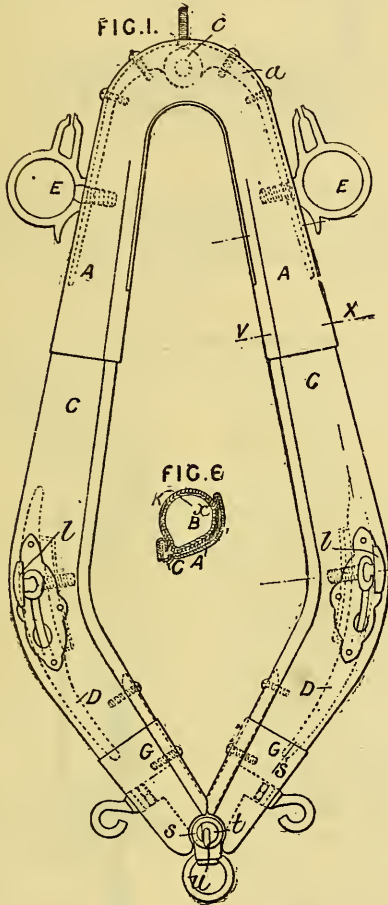


Stirrups.—The object is to prevent the foot from getting too far through the stirrup, and thus to prevent the rider from being dragged, if thrown. The Figure shows a central longitudinal section through the stirrup at right angles to the plane of its bow a. Two curved arms c (only one is shown) are pivoted at d to the top of the bow, and at e to the tread b. They are kept at an angle of about 45° to each other by a wedge piece g. When the safety arms c are not required, the wedge g is removed and the arms are turned back so as to lie near the bow a.

11,434. Péronnet, J., and Danton, H. June 12.

Collars, neck; fastening; stuffing materials.—The collar is made up of curved metal plates A, C, G

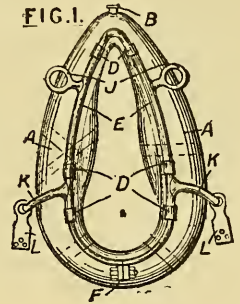
of modified U-section, within which are bodies B, Fig. 6, of fabric *x* stuffed with straw, horse-hair, cork, rubber, &c., and covered with leather *k*. Fig. 6 is a section on the line V X. These bodies



are secured by plates D, into which the adjustable hame fastenings *l* screw, as shown. The plates C slide in the plates A, and are adjustably fixed thereto by the screwed shanks of the rein rings E, which screw through the plates A, C and the bars *a*. The plates C can also be adjustably fixed to the plates G. The collar is hinged at the top by the bars *a*, hinged together at *c*, and covered by a strip of leather. The collar is fastened at the bottom by a stud *t* and eye *s* with an eccentric turn pin *u*.

11,497. Garnier, E., and Ellis, W. June 13.

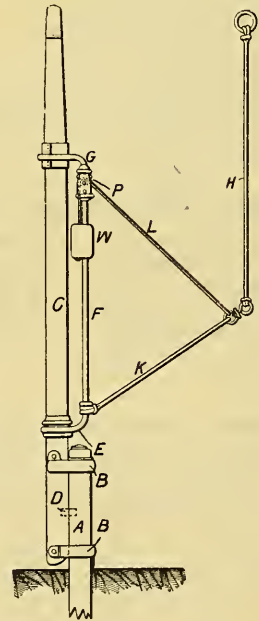
Collars, neck.—The body A of the collar consists of a hollow case of rubber &c., or of canvas &c., rendered air and water proof, and strengthened by bands of canvas, leather, &c. This case is inflated with air or other gas, which is prevented from escaping by a valve B. The draft is taken from a rigid frame or frames or hames E, preferably of metal tubing. The hames &c. may be bolted together at F, and attached to the hollow case or body by straps, clips, rings, &c. D. The rein rings J may be attached by straps, or by soldering, screwing, &c. Various forms of hame tugs K, L are described, some being of metal, and others of rubber, leather, &c. A second or third pair of hames, parallel to the first and suitably connected thereto, may be employed. These may be padded where they touch the collar body.



11,775. Torrens, J. A. June 18.

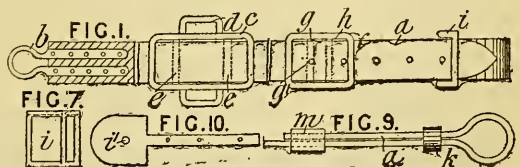
Tethering animals.

—To the peg A driven into the ground is secured the post C by means of loops B, B and a pin D. A bar F is loosely connected to this post by eyes E, G. The head strap H is attached to two ropes K, L; the rope K is attached to the eye E, and the rope L runs over a pulley P, and terminates in a weight W, which slides upon the bar F.



11,779. Burgess, C. H. June 18.

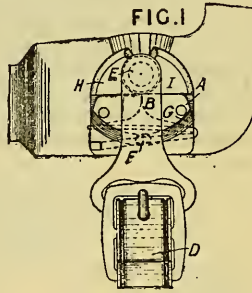
Fastening.—The trace *a* has an eye *b* or snap hook at one end, is threaded through a compound loop *c* in the middle, and is fixed to the buckle *f* at the other end. The hame tug is dispensed with. The loop *c* has cross-bars *e*, *e* and side loops *d* for the back



and belly bands. The buckle *g* has two cross-bars *g*, *h*, on one of which *g* there is a fixed tongue *g*¹. The trace is attached to the splinter bar by a short strap, one end of which is fastened to the cross-bar *h* of the buckle, and the other to the loop *i*, Figs. 1 and 7, after being passed through the loop to form a noose. The end of the trace is passed through the opening *i*¹. In a modification, the trace is prolonged, and then bent back, passed through a running loop, and fastened to the cross-bar of the buckle. In another modification for heavy traces, the trace is bent back, and passed through a loop *k* as before, but the end is fastened in the loop *m* by a transverse screw, which passes also through a perforated metal piece, Fig. 10, let into the trace.

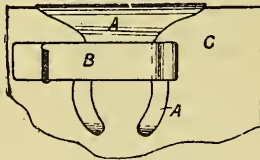
11,781. Harries, G. E. June 18.

Stirrup straps, suspending.—The stirrup leather *D* is buckled to a plate *B* provided with a grooved stud *E*, which fits between the bevelled edges of two spring jaws *H*, *I* pivoted to the plate *A* fixed to the saddle-tree. A pin *F* on the plate *B* fits into a circular groove *G* in the plate *A*. If the rider is thrown in any way, the stud is freed from the jaws *H*, *I* by the movement of one or both of them, and the stirrup leather is detached.

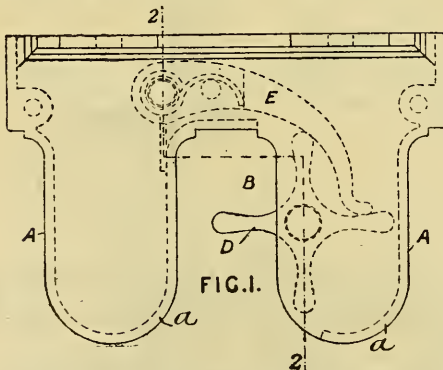


12,058. Machell, H. June 22.

Rein holders.—The reins are held by a spring clip *B* attached to a forked piece *A* which embraces the foot-board *C*.

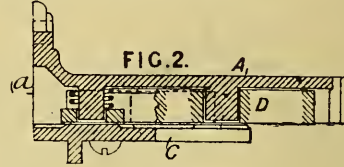


12,296. Funt, J. June 25.



Brackets or stands.—The rack is formed of a top plate having arms *A* and spaces *B* to receive the

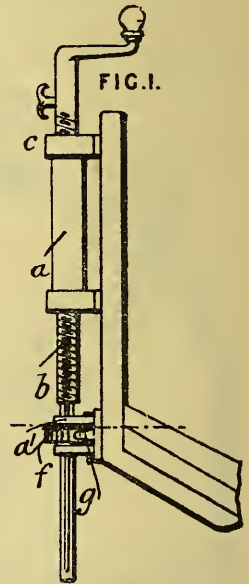
handles of umbrellas, walking sticks, golf clubs, billiard cues, driving whips, &c. The top plate has flanges *a* which with a bottom plate *c* form a case in which on every arm *A*, except the ends,



are pivoted turn wheels *D* acted on by a spring actuated arm *E*. By pushing in the handle it rotates the wheel a quarter of a revolution and is retained by the following spoke. Fig. 2 is a section on 2-2, Fig. 1.

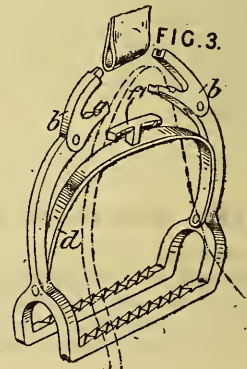
12,387. Maasen, H. June 26.

Stopping runaway horses.—On the dashboard or other convenient part of the vehicle is mounted a socket *a* screwed internally to receive a spindle *b* having a crank-handle at its upper end, and being reduced at the lower end to pass through a double bearing *a*¹ between the parts of which is a ratchet-wheel *f* prevented from rotating in one direction by a pawl *g*. A feather in the ratchet-wheel slides on a groove or key way in the spindle. Should the horse bolt or become restive the driver places his reins over the hook *c* and rotates the spindle *b* and, by winding up the reins, effectually controls the horse.

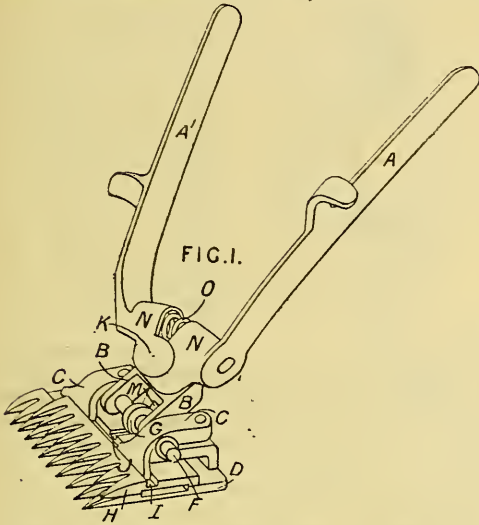


**12,399. Miha-
l6czy, A.
June 26.**

Stirrups.—The stirrup releases the rider's foot, if an accident occurs, by the opening of the stirrup eye, which consists of two hinged parts *b*, *b* held together normally by the T head *f*¹ on the inner bow *d*.

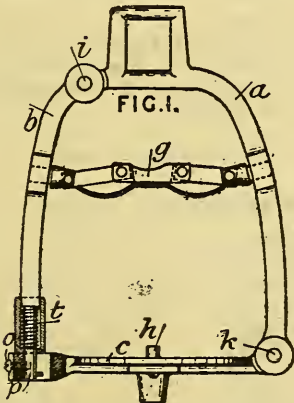


13,340. Feeny, V. I., [*Greene, C.*]. July 10.



Horse &c. clippers.—The cutting head is connected to the handles by a hinge joint so that they can be used at any angle. The handles A, A' are pivoted together at K, and a spring O between them is held by the sockets N. The hinge pin F passes through lugs B on the handle A and brackets C on the lower plate D. This pin F is movable longitudinally and has a disc G in its centre which engages a groove J in the upper cutting plate H and a slot M in the lower end of the handle A'. By this means the upper plate H is worked by the handle A' in any position of the handles. An extension of the bracket C takes into the slot I to guide the upper plate H.

13,496. Thompson, W. P., [*Huddorf, J. M., L., and Eggers, H. F. H.*]. July 12.

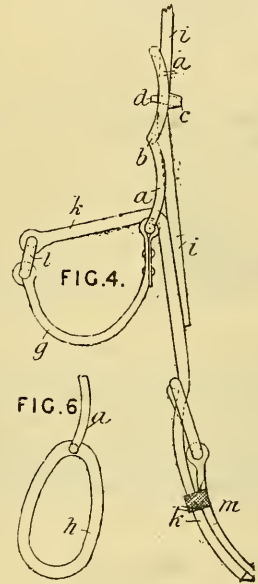


Stirrups.—To the leg a carrying the suspension loop are hinged the tread c at k and the leg b at i. The leg and tread are connected together by the

screw o fitting into a notch in the pin p which lies in a slot in the tread. The legs a, b are drawn together by the binged cross-bar g. If the rider is thrown his foot engaging with the crossbar draws the legs a, b together and disengages the pin p from the screw o. The spring t then forces the tread to open on its hinge k. A spring pin h of vulcanite &c. prevents the rider's foot from slipping on the tread.

13,631. Burgess, C. H. July 14.

Tugs, shaft. — Shaft - tugs and buckles for use therewith. The buckle consists of a frame a with crossbars b, c, of which the bar c carries a fixed or movable tongue d for the back-strap i arranged as shown. The buckle may be formed at the bottom with a broad flat lip to which the tug g is riveted; this is not shown in the Figures. A strap h is fixed to a loop l on the other end of the tug, and after passing through the buckle a is fastened to the belly-band m. For hansom cabs the tug g may be replaced by a simple loop h, Fig. 6, attached to the buckle a.

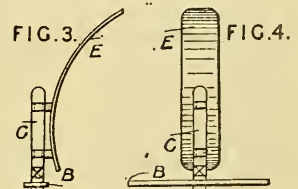


13,764. Clarke, C. H. July 17.

Whips and hunting crops.—The handles are formed with a covering made up of flat felt rings secured together.

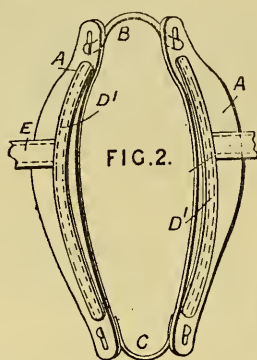
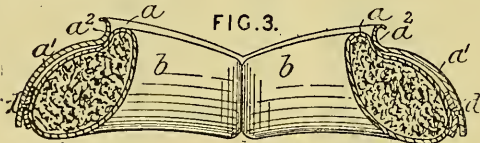
13,985. Bywater, W. M. July 20.

Saddles. — The pommels of ladies' riding saddles are made to pivot to afford ease to the rider. The pommel is attached to a curved plate E which pivots upon the upright C carried by a plate B fixed to the body of the saddle.

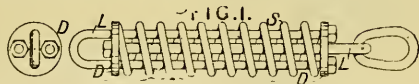


14,051. Bill, D. K. July 21.

Collars, neck.—The collar consists of two plates of leather A stiffened by metal bars beneath the leather strips D¹ and connected at the top and bottom by curved bars B, C with T-ends fitting into slots. The stiffening bars may have branches at the ends of the traces E.

**14,703. Sewell, F. G. G., and Sewell, H. J.** July 31.

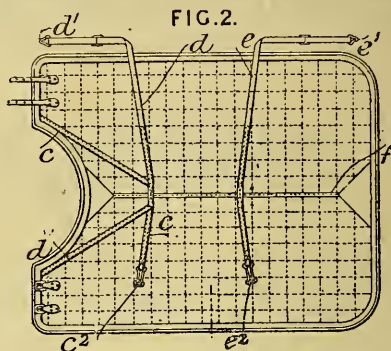
Collars, neck.—The Figure shows a transverse section of the collar. The forewale *a* and afterwale *a'* are formed of a single piece of sheet metal or thin cast metal shaped as shown, the groove *a*² being for the hames. A replaceable leather cushion *b* stuffed with straw is attached within the frame by stitching it to a strip of leather *d* riveted to the afterwale.

14,963. Mills, W. Aug. 4.

Fastening.—Coiled draw springs suitable for the harness of horses drawing trams &c., shunting railway wagons, drawing canal boats, and for use with ships' ropes, anchor cables, &c. The spring *S* is enclosed between two discs *D* in each of which is secured the ends of a U-shaped link *L*, which slides freely through the other. In a modification, the spring is oval instead of round, the end discs are of corresponding form, and one of the U-links is replaced by a central bar.

15,237. Jones, A. M. Aug. 9.

Whips.—The handle, which is of nickel &c., is hollow to contain hot water in cold weather, the aperture being closed by a suitable stopper, and covered by a flap *C*.

**15,407. Hopewell, J.** Aug. 13.

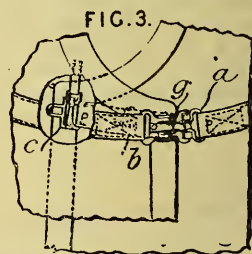
Clothing for animals.—The horse blanket is preferably made of a material in which strengthening cords are introduced at intervals amongst the ordinary warp and weft threads which when napped or dressed hide the cords. The edge of the blanket is strengthened by a cord held by the doubled edge of the material or by a binding. Two strong straps *c, d* stitched to the blanket pass from the front and after crossing terminate in fastenings *e*², *d*¹ thus forming a surcingle. An auxiliary surcingle is formed by a strap *e* with fastenings *e*¹, *e*². A strap *f* runs along the back.

15,408. Hopewell, J. Aug. 13.

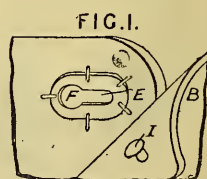
Clothing for animals.—The

blanket is adapted to fit horses of different sizes by making the breast part large, and providing it with suitable fastenings so that it may be overlapped when used for smaller horses.

The Figure shows the breast part thus overlapped and fastened, a hook *g* taking into the eye *a* of the series *a, b, c*. The end loop *c* is supported by a fastening on the inner side of the outer fold of the blanket.

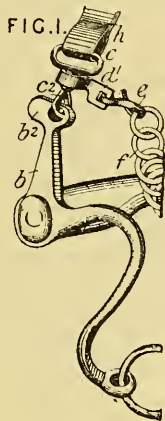
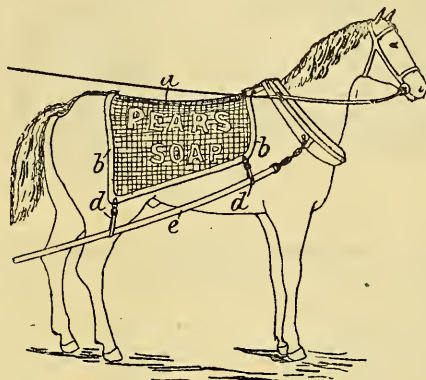
**15,472. Schwarz, S.** Aug. 14.

Fastening.—Clasp fastening formed of a metal plate bent at an angle and having a keyhole slot *E, F*. The plate may be single or bent double the back part being slotted. *I* is the stud.



15,786. Spohr, P. Aug. 20.

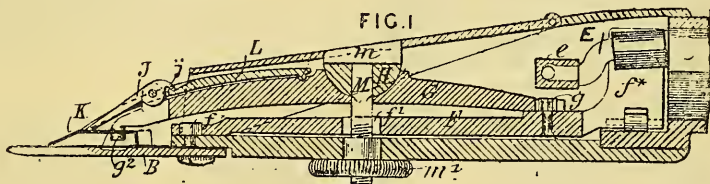
Bits.—The bit arm b has a projection b^2 to prevent the bit from twisting and is connected to the bridle h and curb chain f by a fastening consisting of a swivel c , link d^1 , and hook e . The swivel c has an eye c^2 or a hook, and in the latter case the link d^1 may be notched so that the mouth of the hook is open only when the link is turned at right angles to its present position.

**15,842. Coltman, F. J., and Whitby, A.** Aug. 20.

Clothing for animals.—Relates to a fly net a which has a marginal strap b to which loops d are attached to support the traces e . Letters forming advertisements are attached to the net, as shown.

15,923. Justice, P. M., [Noakes, W. M., and Clarkson, E. J.]. Aug. 21.

Horse &c. clippers.—The cutter plate K is reciprocated over the comb plate B by the lever G which has pins g^2 taking loosely into the cutter plate. The lever G is pivoted on the hemispherical head H which is drawn down to adjust the tension by the bolt M and milled nut m^1 . To the front end of the lever G is pivoted the pressure piece J which has a tail j bearing upon the loose fork L . The stem of this fork rests upon the lever G while its prongs bear upon the cutter plate K . The lever G is reciprocated by the pin g carried by the lever F which is pivoted at f^1 , is slotted at f^2 for the bolt M , and is forked at f^* for the crank pin E . The crank pin is extended and bent, as shown, so as to bear against a thrust block e .

**16,039. Evans, W.** Aug. 23.

Saddles; dog collars.—Relates to forming illuminated designs on leather, applicable to forming harness fronts for horses, saddles, dog collars, and other articles.

Consists in securing convex blocks or beads g , by means of threads h in holes formed in the material f , i in any required design.

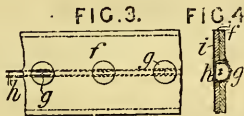
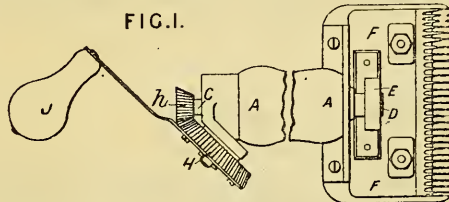


plate E carried by the cutter plate. The eccentric is fixed to a spindle C which passes through the handle A , and terminates in a bevel wheel h gearing



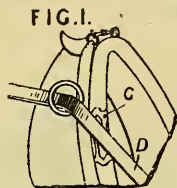
with another bevel wheel H provided with a handle J . Spur gearing may replace the bevel gearing.

16,142. Johnson, J. Y., [Little, D.]. Aug. 24.

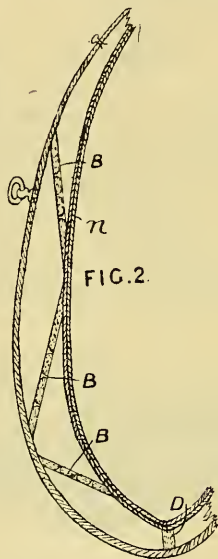
Horse &c. clippers.—The cutter plate F is reciprocated by an eccentric D working in a slotted

16,456. McCallum, C. Aug. 29.

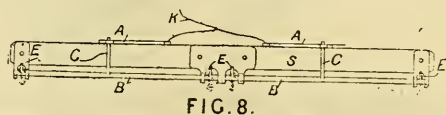
Collars, neck.—The collar is protected from the wear of the rein D by a metal plate C.

**16,891. McLennan, A. F., and Fairie, J.** Sept. 5.

Collars, neck; saddles; lining and padding.—Fig. 2 shows a longitudinal section of one side of the pneumatic collar which is lined with rubber *n* forming the inner wall of an air chamber divided by perforated partitions B into smaller chambers. The perforations are made smaller at one end than the other, as shown, so that air bulging out a partition passes more freely one way than the other. A partition D at the bottom prevents the passage of air between the two sides of the collar. Riding and harness saddles are formed in a similar way. The lining *n* may be ribbed and covered on the surface with some soft fabric, and the frame of the collar &c. may be of aluminium or other metal.

**16,895. Chopping, A., and Pullen, E.** Sept. 5. *Drawings to Specification.*

Reins, bearing. A part of the bearing rein is made of india-rubber &c. to allow expansion, and thus give more comfort to the animal.

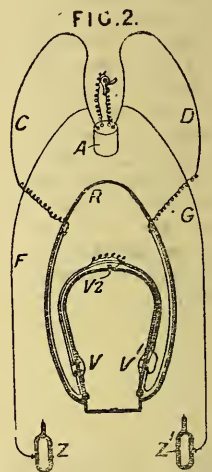
17,073. Corp, J. Sept. 7.

Fastening traces. The ends of the traces are passed over pins E on a bar B turning in bearings on the splinter bar S. The bar B has an arm C which is held by a spring catch A controlled by the

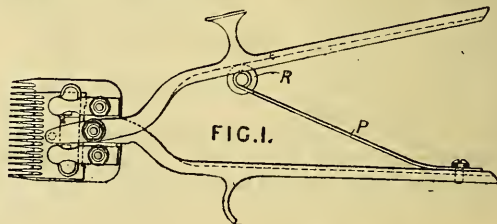
driver, who can thus instantly release the traces by pulling the connecting cord K.

17,248. Defoy, L. Sept. 11.

Horse breaking and training, electric harness for. The rider carries a battery A with primary and secondary coils, and from the latter pass wires C, D down the arms for attaching to the reins R and wires F, G down the legs for attaching to the spurs Z, Z'. Wires in the reins lead to terminals V, V¹, V² in the bridle. The two terminals at V, V¹ respectively are shielded by a slotted plate, which yields when pressed down by the reins so as to expose the terminals, and give the animal a shock. The terminals may be placed at other parts of the harness.

**7,411. Bailey, W. H., Brindle, J. H., Newbold, A. T., and Mason, J.** Sept. 13.

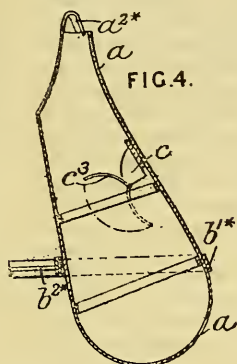
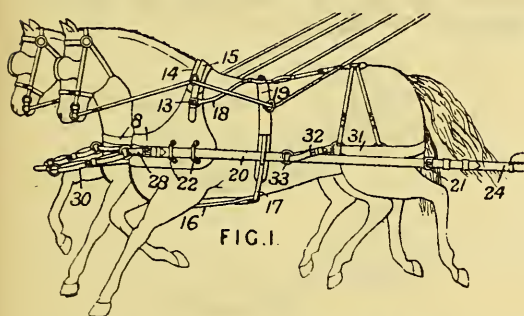
Back bands or chains for harness saddles are constructed with longitudinal links connected by cross pins, upon each of which are placed two or more balls of greater diameter than the width of the links.

**17,428. Clark, W.** Sept. 13.

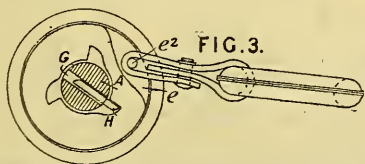
Horse &c. clippers.—The handles are pressed apart by a plate spring P provided with an anti-friction roller R.

17,514. Colchester, E. S. Sept. 14.

Droppings, devices for catching.—A bag *a* is attached to the crupper or tail strap of the horse, elephant, &c. by hooks *a*^{2c} and to the belly-band and breeching by straps *b*^{2c}, *b*^{1c} respectively. A box *c* with a spring lid *c*³ distributes some disinfecting powder whenever the lid is opened by the falling of the refuse.

**17,940. Luke, W.** Sept. 21.

Harnessing, systems of; collars, breast; traces.—The object is to lessen the friction of the harness on the animal when at work. The breast-strap 20 is made in a piece with the trace, which is provided at 33 with a ring for the short strap 32 connected with the breeching 31 and has a buckle 21 for the part 24 of the trace connected to the vehicle. The front part of the breast-strap 20 has buckled to it a strap 28 to which the pole-strap 30 is connected. The breast-strap is supported by loops 22 on the saving collar 8, the upper ends of which overlap in a casing 14 over which is fixed a strap 15 buckled at each end to the upper ends of the collar. A strap 16 passes from the front of the collar to the belly-band 17, and a strap 18 passes from the buckle 13 to the saddle 19.

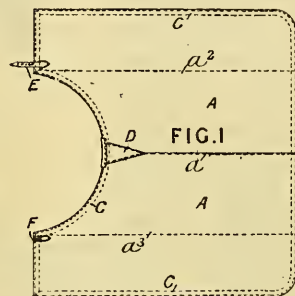
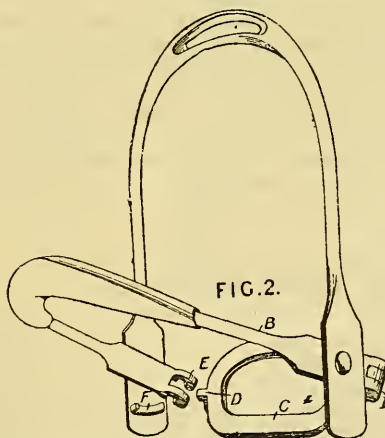
18,168. Ottaway, J. P. Sept. 25.

Stopping runaway horses.—The device is especially for tradesmen's use to enable them to leave

their carts unattended. An extra pair of reins is attached to a spindle beneath the vehicle, which may be connected to the wheel hubs by a lever. This spindle in rotating winds up the reins above-mentioned if the horse moves forwards, but does not do so if it backs. Fig. 3 shows the clutch for effecting this object. The reins are attached at *e*² to the drum *e*, which has ratchet shaped notches for the pin *H* sliding in a channel *G* in the spindle *A* above mentioned.

18,176. James, G. O. Sept. 25.

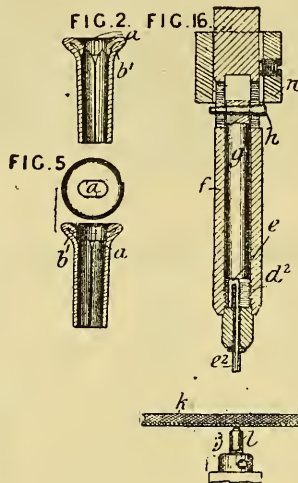
Clothing for animals.—The horse rug or sheet consists of an outer covering *A* of linen, canvas, &c., lined with woollen or woven material. At the neck there is a gusset *D* of canvas lined with leather. The outer cover *A* is preferably in halves sewn together with the seam at *a*. The lining is in one piece and is stitched at *a*², *a*³ and around the margin to a fold of the outer cover, where there is a binding *C* of webbing. A strap and buckle are placed at *E*, *F*, respectively.

**18,287. Cope, J., and Taylor, H.** Sept. 26.

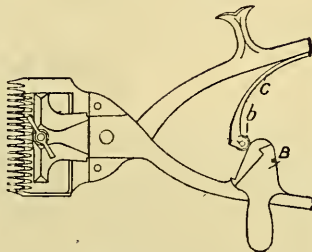
Stirrups.—The tread *C* of the safety stirrup is hinged at one end *I* to the hinged inner bow *B*, and is formed at its other end with a notched projection *D* to enter the fork *E* on the other leg of the inner bow and engage with the projection *F* on outer bow. The fork *E* is also notched to engage with the projection *F*. When the rider falls, his foot turns the inner bow so that the fork *E* disengages the projections *D*, *F* and liberates the tread.

18,674. Dowler, H. Oct. 2.*Riveting-machines.*

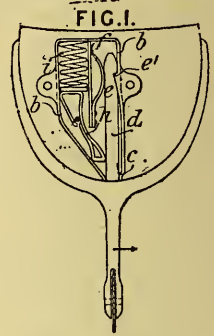
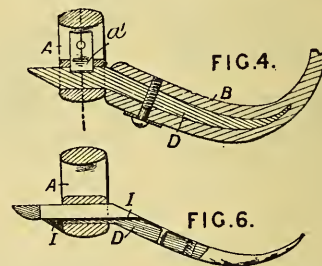
—Relates to hollow or tubular rivets such as are generally employed in joining articles of leather, canvas, or other non-metallic material, as straps, saddles, shoes, bags, &c., and to the tools employed in setting, driving, and clinching the rivets. The rivets are strengthened at the part *b'*, Fig. 2, where the head joins the stem by perforating the head and forcing the edge of the perforation inwards to form a lining or double thickness *a* of metal at the neck *b'*. Split tubular rivets, Fig. 5, have elongated, elliptical, angular, or irregular shaped perforations *a* formed in the head, the perforations having always the same position relative to the slits or divisions in the rivet stem so that the rivets can be placed always in the same position by the setting, driving, and clinching tool. The rivets may be provided with perforated or unperforated caps. The riveting may be performed by ordinary tools, but preferably by the tool shown in Fig. 16. The perforated head of the rivet is placed on the shaped end *e*² of a sliding piece *e*, guided so as not to rotate in the slotted part *d*² of the punch which is screwed into the hollow plunger *f* of the press. As the plunger *f* descends, the sliding piece *e* is arrested by the material *k* and the rivet is forced through by the punch and clinched by the spreading die *l*. As the plunger rises, the sliding piece *e* is returned by the rod *g*, which is provided with a cross pin *h* to strike the frame *n* if the parts stick in the plunger. Several modifications of the riveting tool are described.

**18,790. Bown, W.** Oct. 4.

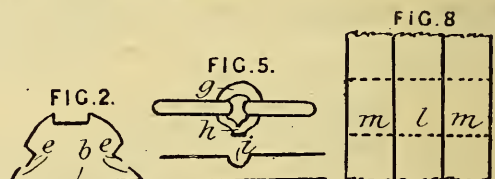
Horse &c. clippers.—The working is made easier for the hand by an antifriction roller &c. *b* carried by the spring *C* and running on the steel faced projection *B*.

**18,830. Hardtke, H.** Oct. 4.*Spur-carriers.*

—The Figure shows the spur-carrier fixed in the heel of the boot &c. and the spur in place. The carrier consists of a box *b* provided with a projection *e*¹ to engage with a notch *e* in the tang *d* of the spur. A spring *f* keeps the projection and notch in engagement until the spur is tilted in the direction of the arrow when the tang may be pulled out. A piece *h*, actuated by a spring *i*, closes the opening *c* on the removal of the spur.

**19,093. Wood, A., Walter, J. S., and Walter, W. M.** Oct. 8.

Fastening.—Relates to a loop or noose for straps, particularly applicable for securing traces and pole straps, to enable fallen horses to be readily released. The trace &c. *B*, Fig. 4, passes through a loop *A*, then round the bolt on the splinter bar &c., and lastly has its end attached to the loop by a snap fastening. Two forms of fastening are shown. The rigid curved piece *D* fixed to the end of the trace passes through an eye in the loop *A*, and is fixed therein by a spring *a*¹, Fig. 4, fitting into a notch or by a spring catch *I*, Fig. 6. The fastening may be dispensed with, and the parts *A* and *D* made in one piece, the object of the curve in the tongue *D* being to lessen the strain on the strap.

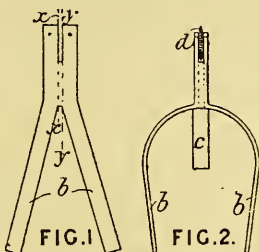
19,106. Richards, J. Oct. 9.

Bridles.—Relates to forming a rigid bridle front or brow band and to making and attaching chains

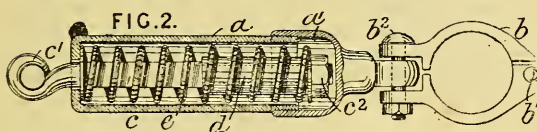
to leather straps for brow bands. The brow band may be made in two strips of metal, of the section shown in Fig. 2, united together by the edges *e*. The lower metal band *b* may be replaced by a thick leather strap. The metal may be corrugated and it may be silver plated or covered with leather &c. The brow band may be made of wood covered with leather. It is attached by loops at its ends to the cheek straps. In brow band chains the whole or a part of each link may be covered with leather. The chain links may be cut from a strip of metal silver plated over its entire surface or only over portions. Fig. 8 shows a strip plated at *l* and plain at *m*, the links to be cut on the dotted lines. Fig. 5 shows the manner of attaching brow band chains to the underlying straps. The short links *g* have projections *h* to fit into depressions *i* in the strap which has at its ends loops for the cheek straps and fastenings for the ends of the chain.

19,425. Ostermann, R. Oct. 12.

Spurs instead of being forged or cast, are formed by bending a blank, Fig. 1, stamped out of sheet metal. The blank is bent on the lines *x, y, y*, the arms *b* are next curved to the form, Fig. 2, the spike *c* for the boot is riveted or soldered on, and lastly, the rowel is attached.



19,434. Shepherd, F. Oct. 12.

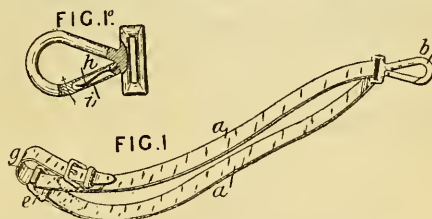


Fastening, spring attachments for. A spring *e* is held between a nut *c*² on a bar *c* and the bottom of a tubular case *a*, the bar and case being attached to parts of a strap or chain by a hook or eye *c*¹ and a screw cap *a*¹ and shackle *b*. A tube *d* on the bar *c* limits the compression of the spring. The shackle is in parts hinged together at *b*¹ and bolted to the cap at *b*². The apparatus may be used on splinter bars of vehicles, and for other purposes. Two springs may be used on the bar *c*.

19,772. Thompson, W. F., [Risch, I. von]. Oct. 17.

Tethering animals.—Relates to a hitching strap, shown in Fig. 1. The loop *g* is attached to the halter ring, and the snap hook *b* is secured to a ring on the tethering peg or on a wall &c., or to the

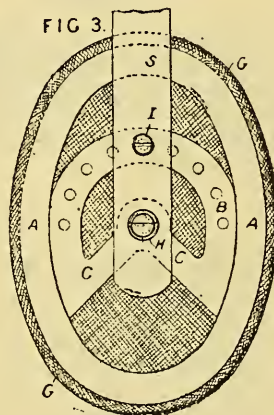
halter ring of another horse. By disconnecting the loops *e* and *g* the strap *a* may be used at its full length. The snap hook, Fig. 1^a, has the



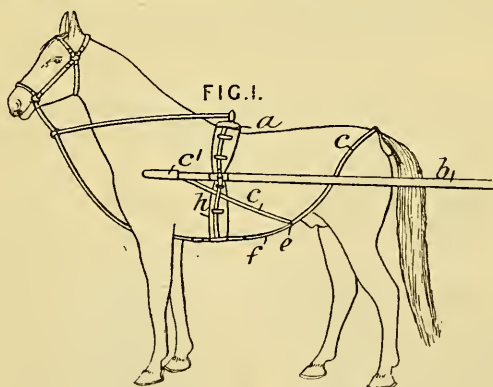
spring *h* within the tongue *i*, as shown, for protection.

20,151. Calantarients, J. A. Oct. 22.

Saddles.—Relates to the construction of the pads of trusses, which construction is also applicable to riding saddles. The invention is described with reference to a truss-pad, of which a back view is shown in the Figure. It consists of an elastic shell *G*, of wire gauze or perforated sheet metal, secured to a rigid frame *A*, furnished with bridge-pieces *B* and *C*.



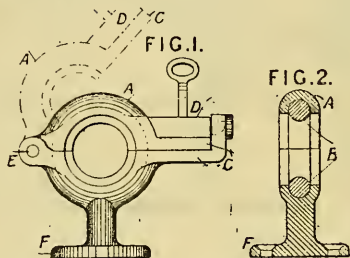
20,254. Thompson, J. A. Oct. 23.



Harness for light wagons, racing sulkies, &c. The object is to dispense with the breast strap and breeching, or to combine these with the new harness. A main strap *c* is secured to the shafts *b* by caps *c*¹ and afterwards passing downwards, as shown, crosses the horse's back, at which point

it carries a crupper. The lowest points of the strap *c* on each side are connected by a strap *e*, and at the junction of these two straps there are secured straps *f* connected to the girth *h* which is buckled to the shaft. The back strap passing over the saddle *a* is also connected to the shaft.

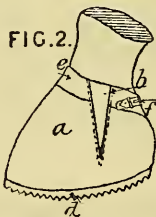
20,564. Egginton, M. Oct. 27.



Brackets or stands for.—The whip &c. is held between the two rubber lined halves of a ring *A* hinged at *E* and having projections *C* provided with a lock or fastening *D*. The base plate *F* is provided with screw holes for fixing the clip to a stand, wall, &c.

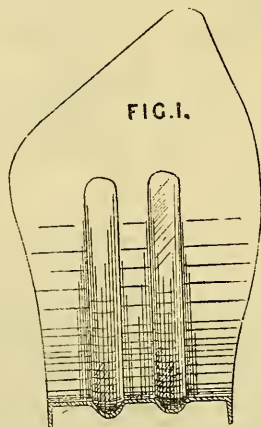
20,722. Johnson, T. Oct. 30.

Horse-boots to prevent slipping. The sole *d* is of thick corrugated or indented rubber backed with leather &c., if desired. The sides *a* are of rubber or of leather with gussets *b* which may be closed by elastic webbing, by springs, or by straps or laces. Around the top is a band *e* of rubber, leather, &c. fastened at the back by straps *f*.



20,979. Bee-bee, J., and Beebe, B. Nov. 1.

Saddles.—The gullet of the saddle-tree, as shown in cross-section, is formed of a corrugated metal plate.



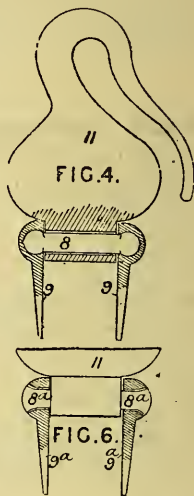
21,277. Oxborrow, F. S. Nov. 6.

Terrets.—The terrets are made with a rectangular opening to prevent the reins from twisting. The rein may be inserted through a gap which may be closed by a spring latch, as shown.



21,678. Mills, T. W. Nov. 10.

Fastening.—Relates to casting in malleable metal the hamehooks for fastening the traces. A mould is formed from a pattern which has the shape of the combined pin 8, Fig. 4, and cheeks 9. A pin 8 with flattened &c. ends is then placed in the mould, and the metal is run in so as to form the cheeks 9 and connect them to the pin. A mould is next formed from a pattern having the form of the combined hook 11, pin 8, and cheeks 9, and the casting 8, 9 just formed is laid in it, the pin 8 having been previously coated with blacking &c. to prevent the adhesion of the pin to the hook. The metal is run in so as to form the hook and connect it to the pin. A hinged hook with cheeks for riveting &c. to the hames is thus formed. If desired, the pins and cheeks may be made in one casting. In a modification, the hook 11, Fig. 6, and pins 8^a are first cast in one piece, and the hinged cheeks are cast on, as shown.



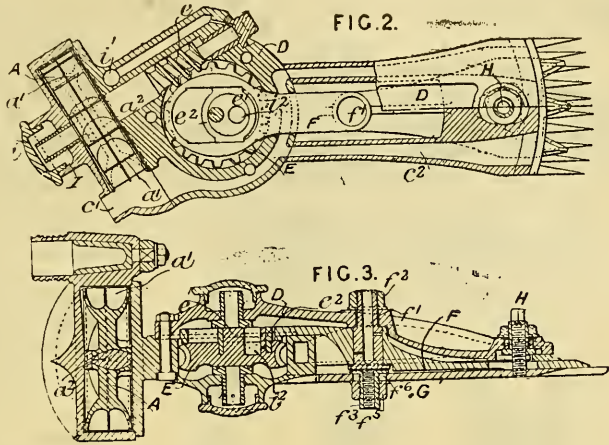
21,742. Müller, M. Nov. 10.



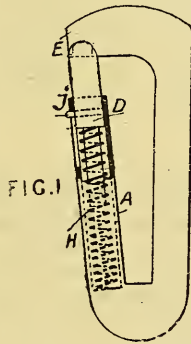
Whips.—The lash *L* is detachably connected to the handle *H* by a socket *B* and two tubes *C*, *A*. The end of the lash is secured to the split socket *B*, which is held against the end of the handle by a conical tube *C* screwing on to the tube *A*, itself screwed &c. to the handle.

21,875. Pitman, C. W. Nov. 13.

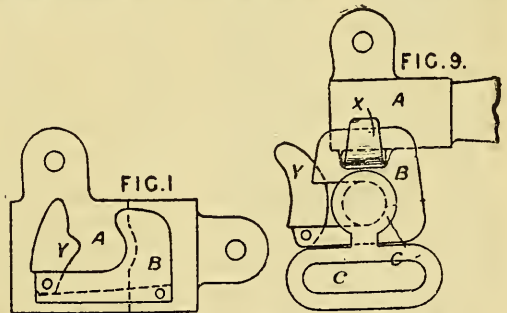
Horse &c. clippers.—Figs. 2 and 3 show respectively horizontal and vertical sections of the sheep clipper which is worked by an air or other fluid pressure motor, consisting of a wheel A with buckets a^1 against which the air &c. impinges. The spindle a^2 of the wheel has a worm e engaging with a worm-wheel E formed with an eccentric e^1 working in a block e^2 sliding in the slotted end of the cutter lever F. This lever turns on a pin f^1 secured to the casing D by a nut f^2 . A flanged sleeve f^3 screws upon the lower end of the pin f^1 , and the comb plate G is held between the flange and a nut f^5 . The comb plate is supported in front by a pin H which is connected to the casing D in a similar way that the pin f^1 is connected to the plate G. Slots f^6 are formed in the plate G and casing D, so that the plate may be adjusted laterally. The plate may also be vertically adjusted by adjusting the screwed sleeves above mentioned and the nuts upon them. The machine is provided with oil reservoirs I and f^1 , and suitable lubricating channels i^1 , i^2 . The exhaust air is led partly through channel c^1 and partly through c^2 to the cutters, where it serves to blow away small loose hair.

**22,016. Wood, A.** Nov. 14.

Fastening.—Relates to improvements on Specification No. 4258, A.D. 1894, and to the method of closing the mouth of open links, loops, and slip and other hooks for ropes, traces, pole-straps, halters, dog leads, and chains for dogs, ships, gymnastic appliances, &c. Fig. 1 shows one form of link for releasing fallen horses, or for use in case of fire &c. A bolt D slides in the hollow arm A of the link, and is pressed up by a spring H so that a pin at the end of the bolt enters a recess in the part E. The bolt may be drawn down and kept in that position by a pin j sliding in a bayonet slot. In a modification, the bolt is replaced by a sleeve sliding on the arm A. The sleeve may be pressed up by a spring, or may be simply slit to engage with a pin which bears on the bottom edge of the sleeve when the link is closed. A swivelling link may be attached to the lower end of the loop or hook.



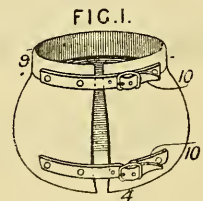
The stud rests with its neck on the plate B, and is prevented from coming off by a spring latch Y, except when the rider is thrown. The latch may



have a horizontal arm resting beneath the stud. In another arrangement, Fig. 9, the plate B is suspended from the plate A by a hook X and eye.

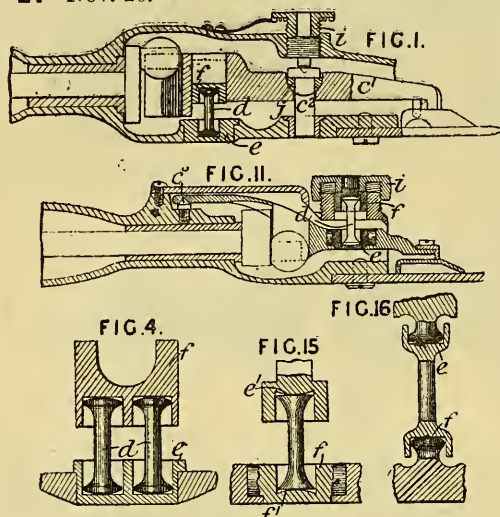
22,708. Wood, F. H. Nov. 23.

Horse boots.—The boot is made of india-rubber, with canvas &c. embedded in it. It has the form shown with sharp edges at 9 and 4, and is secured by buckled straps 10.

**22,196. Biebuyck, G.** Nov. 16.

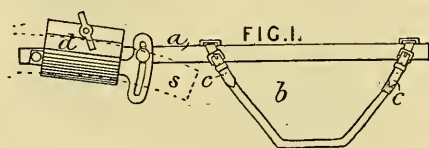
Stirrup straps, suspending.—The stirrup leather is fastened to a loop c, Fig. 9, carrying a stud C. In one arrangement, Fig. 1, the stud is supported by a plate B fixed to a plate A riveted to the saddle-tree.

228,45. Burman, W. H., and Burman, T. Nov. 26.



Horse &c. clippers.—The object is to guide the cutter in a horizontal plane over the comb. Two or more antifriction pins fitting into suitable sockets are used for this purpose. Figs. 4, 15, and 16 show the pins and their sockets. The heads of the pins *d*, Fig. 4, the knobs *e*, *f*, Fig. 16, and the surfaces *e'*, *f'*, Fig. 15, are portions of a sphere having a diameter equal to the effective length of the pin. The pin may have one end like that of Fig. 15, and the other like that of Fig. 16. These pins may be used between the cutter and comb plate of hand clippers, or between the operating lever and the casing of machine-driven clippers. Fig. 1 shows one arrangement, in which two pins *d* are placed at the rear of the lever *c'* pivoted on a loose pin *c²*, the head of which is pressed down by the tension screw *i* and rests upon a segmental washer *j*. The sockets *e*, *f*, Figs. 1 and 4, bear on the casing and a cylindrical part of the lever respectively. In a modification, the tension screw is below the lever, and the antifriction pins are at the front part of it and above it. In this form one of the lower sockets is pivoted on trunnions, as shown at *f*, Fig. 15. Fig. 11 shows another method of employing the pins *d*. The lever is pivoted at *c³*, and the pins *d* are placed between the trunnioned socket *e* and the socket *f*, sliding without turning in the screwed cap *i* which adjusts the tension.

23,305. Duncan, A. Dec. 1.

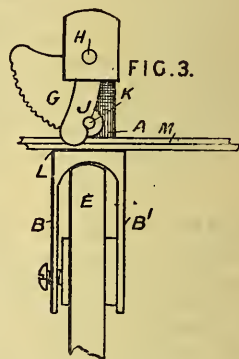


Nose-bags and food containers.—The object is to dispense with the strap attaching the nose-bag &c.

to the head of the animal. The nose-bag *b*, of the form of an inverted truncated pyramid, is attached by straps &c. *c*, or by nailing to rods *a*, which are telescopic or hinged &c., and are connected to the shafts *s* by a clip *d*, as shown, or by tubes on the shafts or by straps. The rods above mentioned may be supported by straps attached to the horse-collar and to the girth. In pair-horse vehicles where a pole is used, the nose-bags are attached to two parallel rods, fitted at right angles to the pole or to a rod forming a prolongation of it. The Provisional Specification states that the rods may be slotted for bolts through the shafts, or the shafts may be hollow to receive the rods which may be operated by rack and pinion or ratchet mechanism.

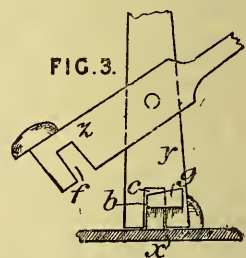
23,475. Behrens, N. Dec. 3.

Rein holders.—The reins *M* are held between the corrugated cam *G* and the top *L* of the piece *B*, *B'* which is fixed to the dash-board *E*. The cam *G* is pivoted at *H* to the upright *A*, which is formed in a piece with the arms *B*, *B'*. The reins are prevented from leaving the cam accidentally by a bar *J* pivoted at *H*, and bearing against a pin *K* on the cam.



23,776. Frost, H. Dec. 7.

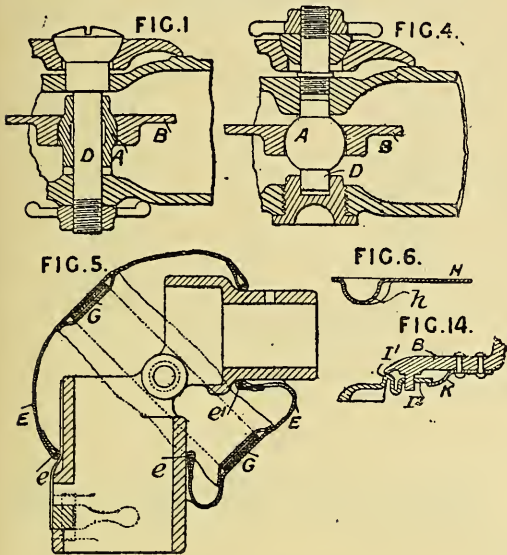
Stirrups.—The hinged tread *x* of safety stirrups is fastened at its free end by a projection, the parts *b*, *g* of which engage respectively with slots *c* in the outer bow *y* and slot *f* in the inner bow *z*. The fastening is thus inside the outer bow instead of outside as usual.



23,856. Justice, P. M., [Marsden, M. W.] Dec. 7.

Stuffing-materials.—In order to form a filling or packing for horse-collars &c. the pith of corn cane, maize, or broom cane is disintegrated and used as the packing material either loose or in prepared bags.

23,903. Newall, J. W. Dec. 8.

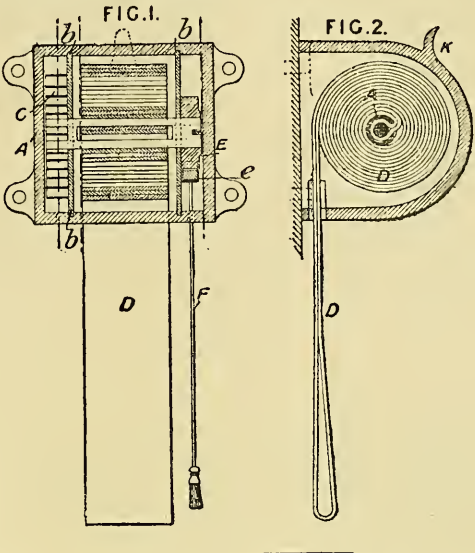


Horse &c. clippers.—Relates to improvements on Specification No. 10,750, A.D. 1891, for pivoting the driving lever, to means for protecting the joint between the machine and the flexible shaft, for varying the extent of the cut, and for strengthening and adjusting the cutter. The lever B, Fig. 1, is pivoted to a ball A which turns on a pin D fixed to the casing, or is formed with pins to turn in bearings in the casing, as shown in Fig. 4. The joint, Fig. 5, is protected by a flexible cover E tied or otherwise held down at *e, e'* and held open by a ring G. The extent of cut is varied by a projection *h*, Fig. 6, beneath the cutter or on a plate H attached to it. Rollers may be used instead of the projection H. The cutter is strengthened and the pressure of the teeth equalized by forming it with a rib I', Fig. 14, on which the pressure lever B bears, as shown. The space between the teeth may be slotted to make them more flexible. The rear I' of the cutter may bear on a spring K, or may itself form the spring.

24,343. Larue, C. Dec. 14.

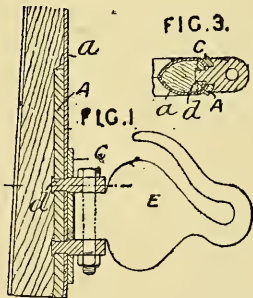
Tethering animals.—The apparatus is shown as applied as an arm rest in a railway vehicle, and consists of a casing divided into three compartments by partitions *b, b* and secured to the wall of the vehicle over a seat. In one of the end compartments is a spring C, and in the other is a ratchet wheel E with which a pawl *e* engages. In the central compartment a double band D of leather or webbing is wound on the axle A. The loop of this band can be used to support the arm or leg, its length being varied by disengaging the pawl by means of a cord F and then pulling it out or allowing the spring to wind it up. When employed in tethering animals the casing is fixed

to some convenient part, and the strap to the animal's collar or halter.

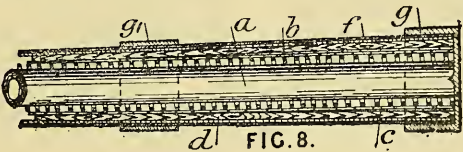


24,512. Co-operative Padlock Society and Wright, T. Dec. 17.

Collars, neck.—Draft staples or hooks E, rein rings, and top staples are fixed to case cart hames by rivets *d* which pass through holes in the backs of the cases *a* and in metal stiffening plates A. Holes through the wooden hame cores and the fronts of the cases are thus dispensed with. The outside of the cases may also be strengthened by plates C.



24,606. Thompson W. P., [Müller, V.]. Dec. 18.



Whips.—The whip handle consists essentially of an inner core of cane with the bark on and a spiral spring surrounding it and protected by suitable wrappings. In the section, Fig. 8, *a* is the cane which is surrounded by strips of thin woven fabric and pieces of cane, both of which are not shown. These pieces extend about three-quarters

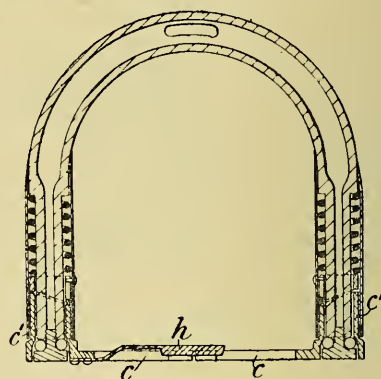
of the length of the handle and give it a conical form. The steel spring is marked *b*; *c* is the wrapping to prevent the oxidation of the spring, *d* pieces of whip cane or strips of woven fabric, *f* wrappings of thread, *g* a cap, and *g*¹ a band.

24,635. Edwards, E., [*Mrose, F. W.*].
Dec. 18.

Stirrups.—The tread is made in two parts *c, c* which open out on spring hinges *c', c'* to liberate the foot and close again automatically. A catch *h* keeps the tread together until considerably strained.

(For Drawing see next column.)

24,635.



24,800. Müller, M. Dec. 20.

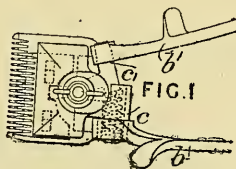
Whips.—The handle consists of an air-pump for inflating the pneumatic tyres of cycles &c. The pump has a spring handle *g*, piston *d*, and flexible nozzle *c*; when in use it is drawn from the whip &c. at the joint *j*.



A.D. 1895.

67. Stevens, G. F., and Stevens, F. E.
Jan. 1.

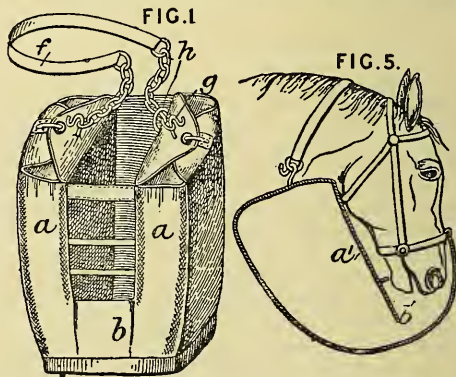
Horse-clippers and the like.—The handles *b, b'* are pivoted to extensions *c, c'* of the blades so that they may be inclined at any required angle to the plane of the blades.



80. Hemmings, J. F. Jan. 1.

Nose-bags.—The bag is formed in two or more compartments; in the form shown in Fig. 1, the food is consumed in the open compartment *b*, to which it passes from the receptacles *a, a* by openings at the bottom. These openings may be controlled by shutters. The food is placed in the

receptacles *a, a* through openings at the top closed by flaps, as shown. The bag is closed up by gather-

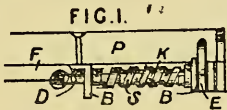


ing the suspending strap *f* and chain between the loop *h* and hook *g*. Fig. 5 shows in section a bag

for military service with a single partition a^1 with the gap at the bottom, as in the other form.

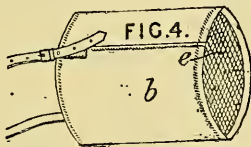
94. Middleditch, H. A. W. Jan. 1.

Fastening.—At the end of the pole P is fixed a plate having guides B, B through which passes the spring-controlled bolt D, which also passes into a hole in each of the eye links E. To release the horse, the driver moves a lever connected to the cord F, which pulls back the bolt D against the action of the spring S and so releases the eye links E. Over the bolt D is placed a brass sleeve K, which prevents the bolt from being withdrawn too far.



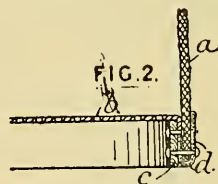
167. Hallen, A. H. Jan. 3.

Nose-bags.—The bag b has a perforated bottom e and a perforated false bottom, between which there is placed a layer of wood wool &c. saturated with a suitable inhalant for medically treating the mouth and nasal passages.



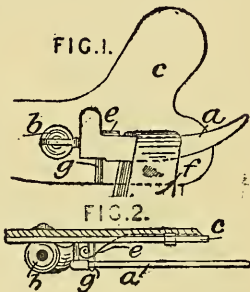
592. Chandler, R. T. Jan. 9.

Nose-bags.—The bottom b is of perforated zinc &c., and is fixed to a ring c of wood or metal to which is riveted the material of the bag a and a leather strip d. The perforated raised bottom keeps the food dry and well ventilated.



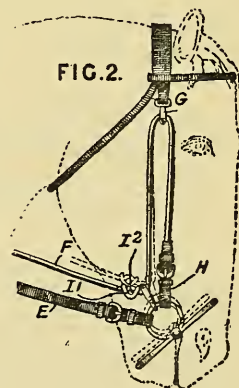
875. Cresswell, T. Jan. 14.

Stirrup-straps, suspending.—The stirrup-strap f is suspended on an arm a hinged to a stud b which can turn in the plate c. A spring e bearing on a shoulder of the arm a prevents it from normally turning on its hinge and a projection g beneath the arm supports it in ordinary circumstances. If the rider falls the stirrup leather is freed by the arm turning on the hinge or the pivot, or both.



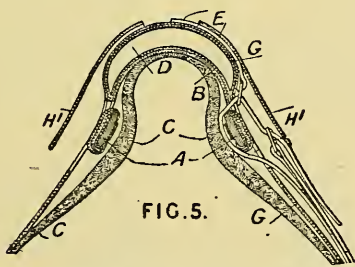
885. Thompson, W. P., [Smith, C.]. Jan. 14.

Bridles.—The object is to obtain more effective control by drawing the bit up into the horse's mouth. The bit rings have ordinary reins E and bridoon reins F attached to them. The bridoon reins run through pulleys G, H on the head band and bit ring respectively and form the sole connection between these parts. A fixed or adjustable stop, preferably formed by a leather loop I¹ and pin I², is attached to the bridoon rein as shown.



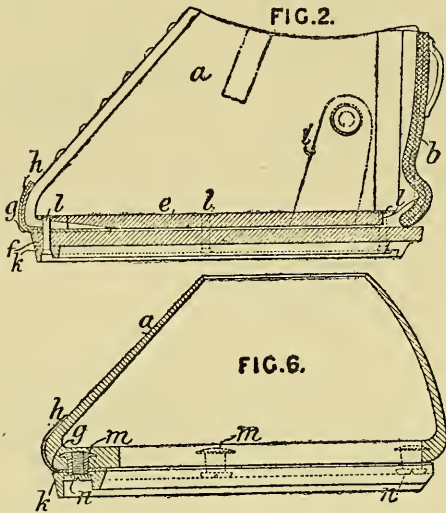
1037. Oldershaw, S., and Nightingale, W. H. Jan. 16.

Horse-boots.—The horse-shoe is attached to the hoof by a horse-boot which consists of an upper a of leather &c. with a gusset b, Fig. 2, of rubber &c., and a slit in front for lacing up. The upper



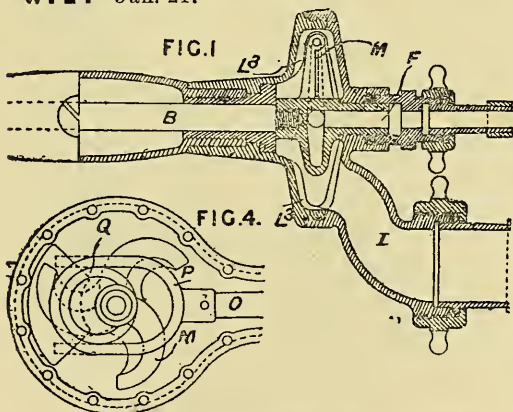
Saddles.—The saddle is more especially for jockeys' use in races. To the tree A, open in the centre, is tacked a web portion B of leather &c., and over this is tacked an inflated rubber bag D open in the centre. By this arrangement, the inflated cushion is not pressed down as the girth is tightened, but serves simply to support the rider. Over this is a seat with flaps G and skirts H¹. The ordinary padded or felt cushion C is secured beneath the saddle. The stirrup straps pass round the side bars of the tree A, and are connected by a strap E resting on the inflated pad and sewn down in the middle to prevent the strap from shifting from side to side. The strap E sustains the weight of the rider when standing in the stirrups.

is riveted to an inner sole *e* of leather, vulcanite, &c., and an outer sole *f* of similar material separated by a steel plate *g*, preferably made with a toe clip *h* and side clips *i*. The metal shoe *k* is attached



to this boot by rivets *l*. In very light shoes the plate *g* may serve as the shoe proper. In a modification, Fig. 6, the inner and outer soles are replaced by a single thick sole beneath which the plate *g* and shoe *k* or racing plate are secured by bolts *n* and nuts *m*. The lacing may be replaced by a second elastic gusset, or the upper may be made of a continuous piece of rubber &c., to be sprung over the hoof. In some cases the boot may be cemented to the hoof.

1384. Whitehead, E. A., and MacGregor, W. F. Jan. 21.

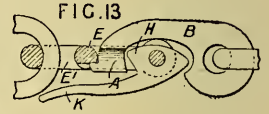


Horse clippers and the like.—Sheep clippers and the like are driven by an air, water, or other fluid motor incorporated with the clipper. The Figures show one form of motor, but other forms, such as the Pelton wheel or Jonval turbine, may be used. In Fig. 1, the spindle *B* of the clipper is fixed to the spindle *F* of a water motor which has three outwardly curved tubular arms *M* working between

baffle plates *L*³. The water enters at *F* and leaves at *I*. In Fig. 4, the motor is shown with a cam *Q* working in the fork *P* at the rear end of the cutter lever *O*.

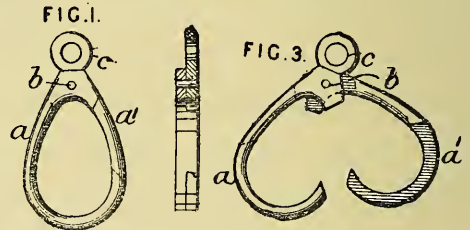
1775. Wilson, R. Jan. 25.

Fastening; tugs, shaft.—The fastening is for use with traces, pole chains, backbands, &c. for rapidly releasing fallen horses &c. Fig. 13 shows the



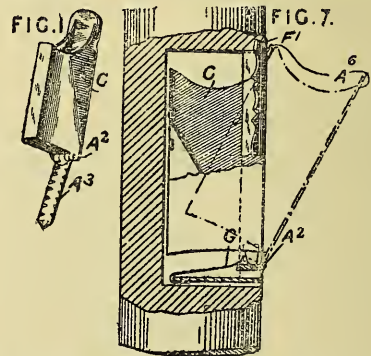
form for cart chains. A piece *B* attached to one part carries a lug *A* fitting against a bar *E* of the frame *E*¹ attached to the other part, the lug being kept in engagement with the bar by an eccentric *H* forming one side of the frame. The eccentric is turned by a lever *K* which may be kept in its locked position by the elasticity of the frame or by a suitable catch. The frame *E*¹ may form part of a buckle for uniting the shaft-tug to the backband.

1928. Woodruff, W. T. Jan. 28.



Fastening.—Two hooks *a*, *a'* flattened on one side, as shown, are pivoted together at *b*; one of them is provided with a fixed eye *c* or with a swivel eye. The device is stated to be applicable for harness.

1962. Anderson, J. W., and Howell, J. Jan. 28.

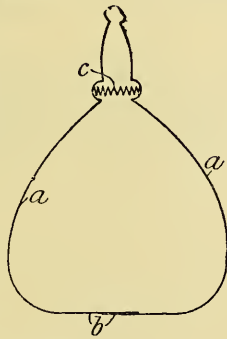


Whips combined with receptacles. The receptacle described in the Specification is a match box. The box, Fig. 1, is conveniently hinged, as shown at *A*², to a roughened tang *A*³, which is driven into the stick &c. at the bottom of a recess in the same,

into which the box fits, but the method of hinging may be varied, another form being shown in Fig. 7, in which the box is hinged to a border F^1 attached to the stick round the recess. The box is maintained in an open or closed position by a spring G , Fig. 7, by a stiff hinge, or by friction of the box on the sides of the recess, or, in a closed position only, by a sliding ring on the stick. A roughened surface C may be placed on the sides or front of the box. The front may be made to apparently form part of any ornamental band or cap on the stick, or may be made slightly raised on a plain portion. In Fig. 7, the border F^1 may have attached to it a partial or complete lining for the recess. The box may consist of a front and two wings, sufficiently large to prevent the matches falling out sideways when the box is opened. A catch or nick A^6 is provided to facilitate opening the box. In sticks with straight handles, provided with a cap, the box would preferably be fitted in the latter.

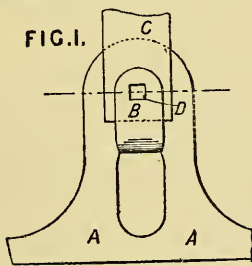
2057. Konski, S. Jan. 29.

Stirrups.—Consists of a spring metal band a bent to the shape shown, so that the ends b overlap at the part whereon the rider's foot rests. A spring c normally keeps the stirrup closed; but, in the event of any unusual strain, the ends b separate and the rider's foot becomes disengaged therefrom.



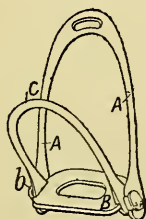
2058. Tappenden, R. Jan. 29.

Collars, neck, hames for. Part of the hame tug A is turned up to form a clip B , between which and the body of the tug the trace C is secured by a bolt and nut D or their equivalent.



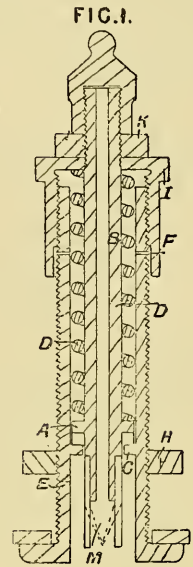
2105. Fraser, H., and McHardy, A. Jan. 30.

Stirrups.—The tread B and inner bow C are connected to the hooked ends of the outer bow A by pins b , which become disconnected if the rider is thrown with his foot in the stirrup.



2241. Craig, W. J. Feb. 1.

Saddles.—Relates to inflating valves for pneumatic saddles. A tube E is screwed externally to receive a washer H for attaching it to the tyre or other article with which the apparatus is used, and also to receive a screw cap I for regulating the pressure of a spring D , which presses a relief valve A on to its seat C . The spring is also adjusted by a washer K . The escaping fluid passes away through openings F , which are protected by an overlapping portion of the cover L . The spindle B of the valve A is hollow, and is fitted with a check valve M for inflating.



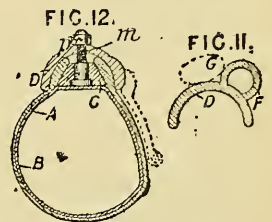
2413. Bird, G. Feb. 4.

Saddles, stirrup leathers for. The stirrup H is held in a position ready for the rider's foot—that is, in a position at right angles to the horse's side—by a strip of spring metal &c. G .



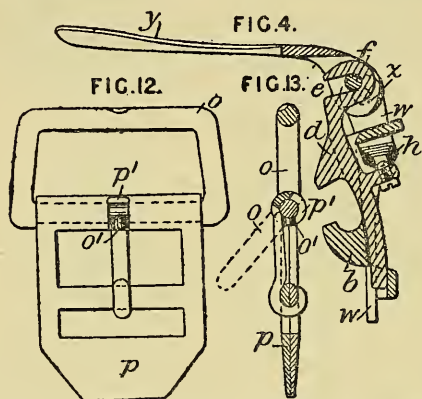
2572. Garnier, E., and Prescott, S. J. Feb. 6.

Collars, neck.—Improvements in Specification No. 11,497, A.D. 1894, for pneumatic collars. The Figure shows a cross-section through the collar body, which consists of an inner tube B of rubber &c. in one or more compartments, and an outer tube A of leather, rubber, &c., the longitudinal opening in which, through which the inner tube is inserted, may be closed by an outer bar D and inner bar C , drawn together by



bolts *m* and nuts *p* or other suitable fastenings. The bar *D* carries terret rings, hame tugs, and a martingale loop. In a modification, the bar *D*, Fig. 11, is formed with a hollow rib *F* forming a fore-wale, and separate hames *G* rest upon it in the position shown.

2725. Weston, B. S., and Wilton, H. S.
Feb. 7.



Stirrup straps, suspending.—Fig. 4 shows a section of the saddle-bar in the open position, and Figs. 12 and 13 show the combined loop and buckle for use therewith. The base plate *w* is fixed to the saddle-tree, and is formed with a broad hook *b* bevelled at the point. The loop *o* is kept in this hook by a vertically sliding locking piece *d* pressed down by a spring *h*. The piece *d* is controlled by a locking lever *y* pivoted to the base plate *w* at *z* and engaging with the piece *d* by a pin *f* in slot *e*. The lever *y* lies beneath the saddle flap, and can turn up only when the rider has been thrown from his saddle. The turning of the loop *o* in the buckle *p* is limited by a pin *o'* in the slot *p'*.

2802. Smith, D. Feb. 8.

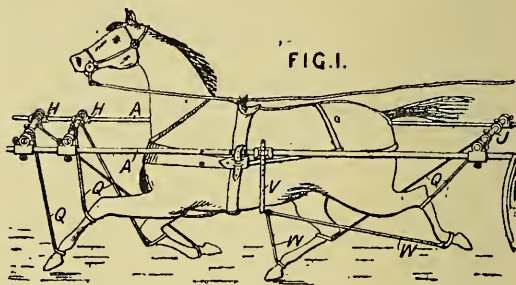
Collars, neck.—The forewale is protected from the wear of the reins, shafts, &c. by sheet metal pieces *A* riveted &c. in place.



2841. Woods, H. B. Feb. 8.

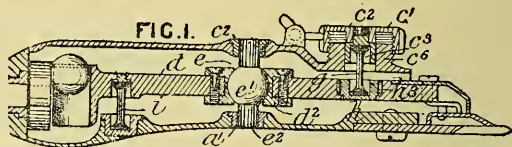
Training horses &c. and other animals.—Elastic cords *Q* are attached to the legs of horses &c. and to adjustable cross bars *H*, *J* carried by shafts *A*, *A* which may be adjusted as regards length, height from the ground, and distance apart. Other elastic cords *W* connect the hind legs to an

adjustable curved metal bar *V*. For human beings the apparatus is similar to that part of the above device which is used for the fore legs of the horse



and projects from a wall, to which also a hand-bar may be secured.

2933. Burman, W. H., and Burman, T.
Feb. 11.

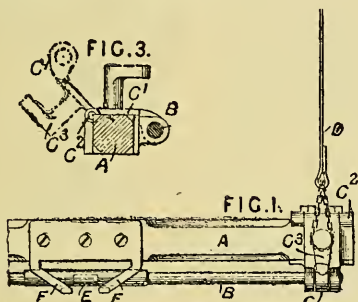


Horse clippers and the like.—The cutter lever *d* of sheep shears, hair clippers, &c. has at its centre a universal joint *e* forming a fulcrum, and is supported at each end by rocking posts *g*, *i* which adjust the plane of the cutter. The joint *e* consists of plates *d'* enclosing a ball *e'* provided with pivots *e''* fitting into bearings *c'*, *a'*. The rocking posts *g*, *i* have part spherical ends with a radius of half the length of the post, and these ends are received in sockets as shown. Two pins *g* are used, and either one or two pins *i*. The socket *c'* for the pins *g* slides in the screw boss *c''* of the casing, and has a pin fitting into the screwed cap *c'* for adjusting the tension. The lower socket *h* has trunnions *h'* supported by the cutter lever *d*. Or two independent sockets with trunnions may be used, or the trunnion may be replaced by a part spherical bearing. In a modification, the sphere *e'* is loose upon a vertical screw which takes the place of the pivots *e''*, and another form of rocking post is used in which one end is spherical.

2989. Walton, H. Feb. 11.

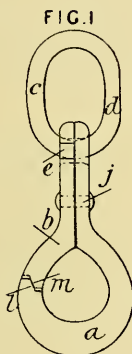
Fastening traces. Fig. 1 shows a plan and Fig. 3 a sectional elevation of the slipping device for fastening the trace *D* to the bar *A* and for releasing it if the horse falls. Both traces are held by a bolt *B* which has a handle *E* at its centre which, when raised from the clip *F*, can be moved sideways to the right and left to slide the bolt and release the rings *C*. The traces may be directly attached to these rings, or each ring may be fixed to a piece *C'*

hinged at C^2 and provided with a hook or stud C^3 over which the trace is looped.



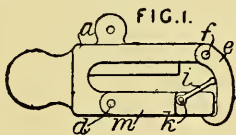
3036. Venables, J. Feb. 12.

Fastening.—Relates to hooks for fastening horse and other chains. The body part a and tongue b fit together as shown at l, m , and are pivoted together at j . Both parts have an eye for a link c , but the eye of the tongue is slotted at e so that on turning the link until the flattened part d is opposite the slot the tongue may be freed from the link and turned on its pivot to open the hook.



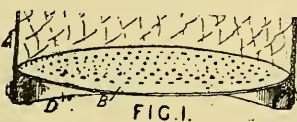
3287. Lorrain, J. G., [*Lalaine, E.*] Feb. 14.

Stirrup straps, suspending.—The stirrup leather is supported on the bar m , which is pivoted at d to the part a fixed to the saddle-tree, and is supported at its free end by the hook e pivoted at f to the fixed part of the saddle bar. A rod i , bearing against the hook e , is pivoted at k to the bar m . If the rider is thrown, the stirrup leather slides against the rod i which forces the hook e outwards, and thus allows the bar m to drop and liberate the stirrup leather.



3288. Tooley, A. W. Feb. 15.

Nose-bags.—The flat bottom B , of sheet metal &c. and plain or perforated, as shown, is fixed on the top of a wooden ring D , to which the material A of the bag is secured. A metal ring may replace the wooden ring, or the edge of the plate B may be turned down to form the flange, the object of which is to prevent the contact of the bottom of the bag with the ground.



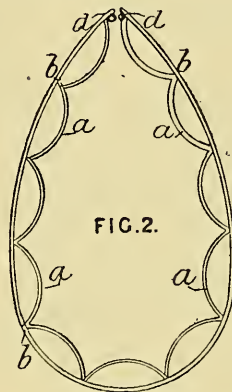
3337. Nightingale, W. H., and Penn, W. J. Feb. 15.

Muzzles for dogs, ferrets, &c. A split spring band A of steel &c. to pass round the nose, is adjustably fastened at its ends by a pin E taking into one of a series of holes C . Pins F on the band take behind the canine teeth or tusks of the animal.

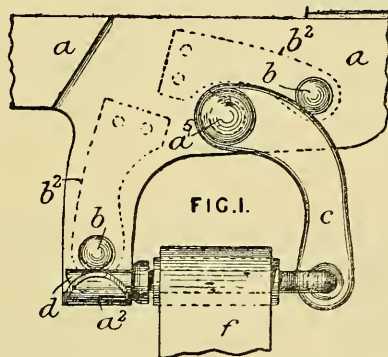


3395. Godkin, S. Feb. 16.

Saddles; collars, neck.—The pneumatic collar (as shown in section in the Figure) and saddle are lined with canvas &c. a , which is preferably joined to the outer leather at intervals b, b , so as to form compartments. Openings may be made in the partitions, so that the compartments communicate. Valves at d, d control the inflation.



3676. Cooper, S. A., and Nicholls, J. O. Feb. 20.



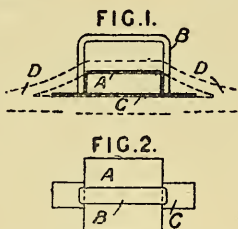
Stirrup straps, suspending.—The stirrup strap f is supported by a bar d fitting at one end in a hook a^2 on the foundation plate a , and linked at its other end to the quadrant arm c pivoted at a^3 to the foundation plate. Knobs b , attached to springs b^2 and projecting through holes in the plate a , prevent the bar and arm from shifting too easily; if, however, the rider is thrown the knobs yield and

free the arm and bar, and thus also the stirrup leather.

3839. Aitchison, J. T., Hampson, W., and Scott, J. Feb. 22.

Bridles; fastening.—

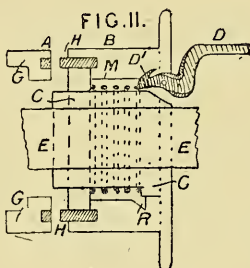
The noseband D is secured to the cheek strap by a double metal loop A, B on a base plate C. The loop A and base plate are secured between the layers of the nose-band, and the loop B projects through the outer layer. In use the cheek strap passes through the loop A through the bit ring and back through the loop B.



3833. Arriaran, P. Feb. 22.

Stopping runaway

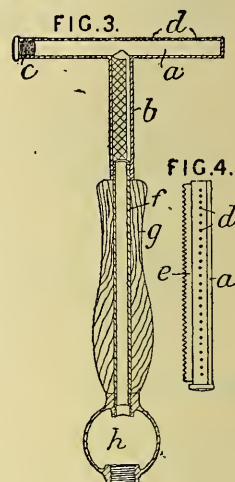
horses.—A noose round the hind legs of the horse or horses is supported by elastic bands from the traces. The free end of the noose is fastened to a drum on the axle of one of the wheels. When the drum is rotated the cord is wound up, the elastic bands break, and the noose is drawn tightly round the horse's legs. The Figure shows a section of the drum B &c. The drum is rotated by pins H fitting into sockets G in a ring A fixed to the wheel hub. The pins are normally held out of engagement with the sockets by a catch D', pivoted to a sleeve C fixed to the axle E. When this catch is released from the annular groove R by pulling a cord attached to the lever D, the spring M forces the drum B to the left and the pins engage with the rotating ring A.



3838. Newton, G. F. B. Feb. 23.

Singeing apparatus.

—The apparatus comprises a specially formed spirit lamp with a comb attached. The comb *e* is fixed to one side of a perforated tube *a* provided with a stopper *c*, and connected by a tube *b* to the hollow handle *g* terminating in the reservoir *h*. Cotton wicks &c. are placed in the tubes *a*, *b*, *f* so as to communicate with the reservoir containing benzoline &c. When in use jets of flame issue from the holes *d*.



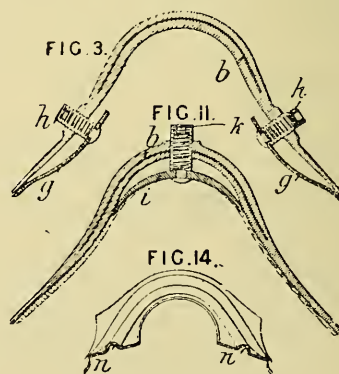
4136. Brendon, G. Feb. 26.

Whips.—The lash F of driving whips and the like is attached to the stock A by two or more telescoping ferrules B, C of aluminium &c. The end of the lash, strengthened by a wire binding D, is inserted into a quill E. The ferrules B, C are secured to the stock and quill respectively by screw rings *b*, *a* or the like. The Provisional Specification states that the quill may be replaced by a wire binding or a rubber ferrule, and that the lash within the metal ferrules may be secured to the stock by an eye and staple.



4517. Petitfils, J. F. V., and Sandron, A. J. March 2.

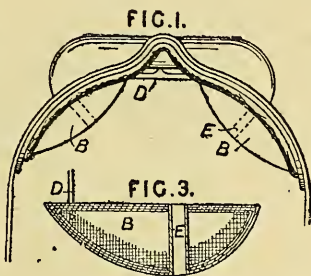
Saddles; materials.—Saddle-trees are cast or stamped in aluminium or aluminium alloy, strengthened by embedded steel bands, wires &c., or by an embedded steel framework, or by suitably bending or corrugating the aluminium itself. Figs. 3 and 11 show an embedded steel band *b*, and Fig. 14 shows a strengthening corrugation *n*. The width of the gullet is varied by side plates *g*, Fig. 3, or a central plate *i*, Fig. 11, adjusted by screws *h*, *k*.



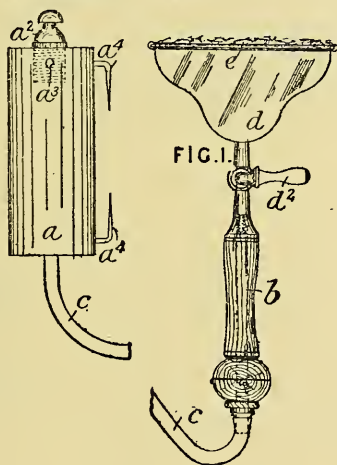
4846. Wall, F. W., and White, J. March 7.

Saddles, pads for; ventilation.—

Riding and harness saddles are provided with two inflated pads B, B, one on each side of the central line. They are composed of rubber-lined canvas, enclosing a rubber bag and may be inflated simultaneously by a tube D. Holes E are formed through the pads for ventilation.

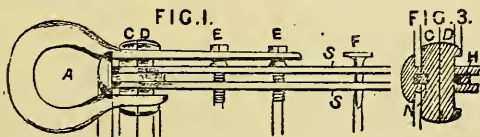


4864. Booth, J. March 7.



Singing apparatus.—The apparatus consists of a lamp d, a reservoir a for spirit &c., and a flexible tube c connecting them. The reservoir has a stopper a², perforated at a³ to enable air to enter the reservoir when the stopper is loosened, and is hung up by hooks a⁴. The lamp is provided with a comb (not shown) and a wick e, and is mounted on a handle b, with a cock d² to regulate the flow of the spirit.

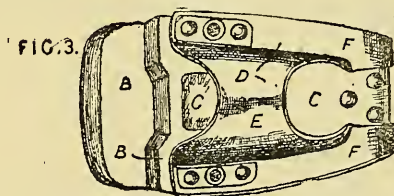
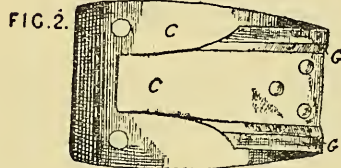
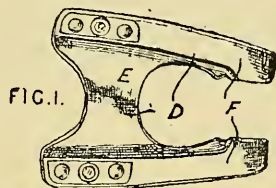
5172. Duly, W. H. March 12.



Tugs, hame; fastening traces. The trace is secured between the strips S, S of steel &c. by rivets F and the metal strips are detachably connected to the loop A which passes through the eye

of the hame. The fastening consists of a gib D and a cottar C which is locked by drawing it sideways by the loop A until a notch N in the cottar fits over a projection at the end of its slot H. The loop A is then secured by screws E, E.

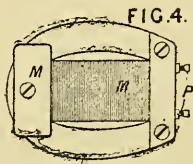
5173. Duly, W. H. March 12.



Collars, neck.—Relates to a wedge-shaped pad inserted between the hame draft and the body of the collar. The pad consists of a block B of rubber, wood, &c. enclosed in a metal plate C, Figs. 2 and 3, of V form. The pad is kept in place by a metal plate D, Figs. 1 and 3, the part E of which fits over the hame draft while the arms F engage with the raised edges G, Fig. 2, and take beneath the hames themselves. The edges of the arms F are turned under to form a groove into which the edges G engage.

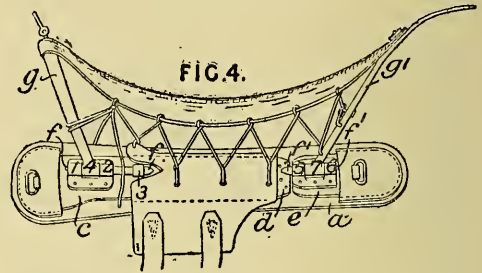
5330. Simpson, A. H. March 13.

Training and breaking in horses &c.—The horse is exercised on a magnetized track or the track is of iron and the shoes are magnetized. Permanent or electromagnets may be used. Fig. 2 shows a section of a track with bars C magnetized by the oppositely wound electromagnets D. Fig. 4 shows a horse-shoe with an electromagnet M with terminals P for the wires.

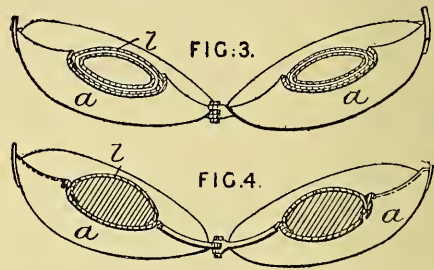


5349. Wilhelmy, W. March 13.

Saddles.—Improvements on the invention described in Specification No. 2621, A.D. 1887, and relating to the pivoting of the forks g, g' of the saddle tree to the steel strengthening plates c, e of the thick leather side plates a and to the connection of the plates c, e with the central steel plate d . The central plate d carries at its ends pins f, f' which pass through eyes 1, 2, 3 and 5, 6 in the plates c, e respectively, and also through eyes 4, 7 on the ends of the front fork g and rear fork g' respectively as shown.

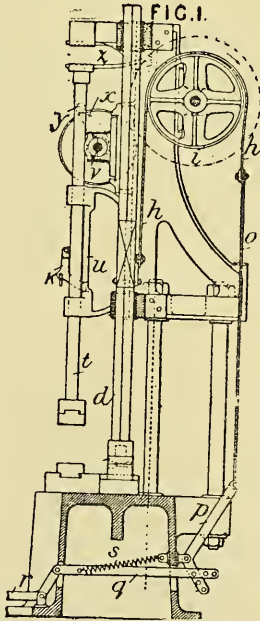
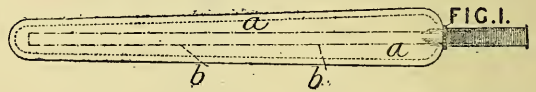
**5945. Philpott, T. S., and Barber, E. March 21.**

The front a of the collar is made of sheet metal the edges of which are curved inwards, Fig. 3, to hold an inflated pad or outwards, Fig. 4, to hold the ordinary stuffing. In both cases the leather covering l is sewn to the edges of the metal. No hames are used, the rein rings and tugs being fixed directly to the metal.

**6014. Gruber, C. March 22.**

Bits; stirrups.—

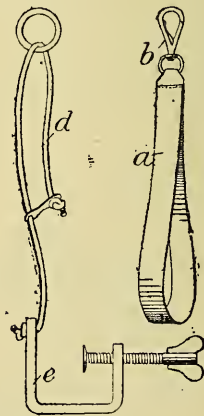
Power hammers or apparatus for forging small articles as snaffles, bits, or stirrups are constructed with any desired number of drop hammers or guide rods d which are raised and let fall independently of one another by means of separate belts h passing over a constantly-rotating drum i . Each belt is attached to a vertical rod o connected by levers p, q to a treadle r by which it can be tightened on the drum i . The treadle and rod o are returned by a spring s . A hammer t lifted by a tappet x on a shaft v acting on the roller y and forced down quickly by a spring z may be mounted in a frame u at one end of the machine. The hammer t can be held in its raised position by a bolt K passing through a slot in the hammer into a recess in the frame u .

**6247. Price, B. C. H. March 26.**

Whips.—The flaps a of flap riding whips, used for flipping the flies off horses, are strengthened by a core b of steel &c.

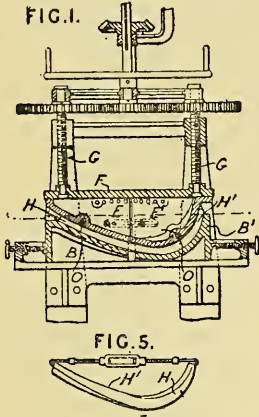
6314. Hobday, F. T. G. March 27.

Animals, stocks and like appliances for holding.—The animal is attached to a table &c. by adjustable cords d fastened to the table by clamps e and connected by hooks b to straps a passing round the legs. The Provisional Specification states that an extra pair of cords d may be attached to a surcingle.

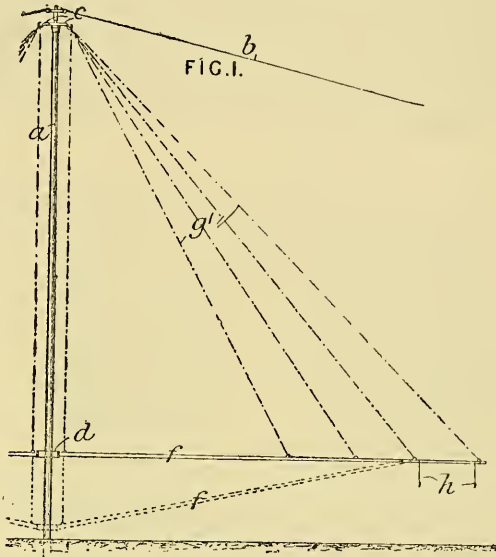


6524. **Weston, D.**, [Weston, P. B.]. March 29.

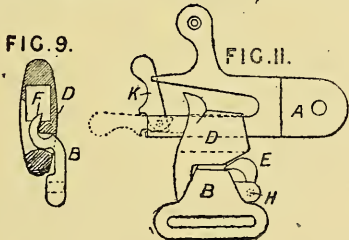
Collars, neck.—Collars, or collars and hames combined, are made from two strips of wood H, H', Fig. 5, twisted and bent as shown. Straight pieces of wood are soaked in water or steamed, and then pressed between dies to give the required shape; they are afterwards held in the bent form by screw clamps, Fig. 5, and allowed to dry. Fig. 1 shows a vertical section of the screw press for bending. The wood is placed between the lower die B, B' and upper die E, E', both of which are in adjustable halves. The upper die is carried by a plate F, which is moved vertically by screws G connected by gearing as shown. The wood is prevented from springing out of the lower die before clamped, as shown in Fig. 5, by means of pins O, O.



circular track. The post *a* is supported by radial ropes *b*.



6563. **Leckie, W. G.** March 30.



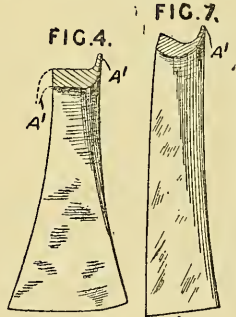
Stirrup straps, suspending.—The stirrup leather is attached to the ordinary saddle-bar A by the intermediate parts D, B. The part D, shown in section in Fig. 9, has an eye for passing over the bar A, and a horizontal bar H terminating in a spring catch E. The part B consists of a loop, with a hook F for engaging with the part D. The loop may be replaced by a buckle. If the rider is thrown backwards, forwards, or upwards, the catch K, or the catch E, or the hook F liberate the stirrup strap respectively.

6813. **Thompson, J.** April 3.

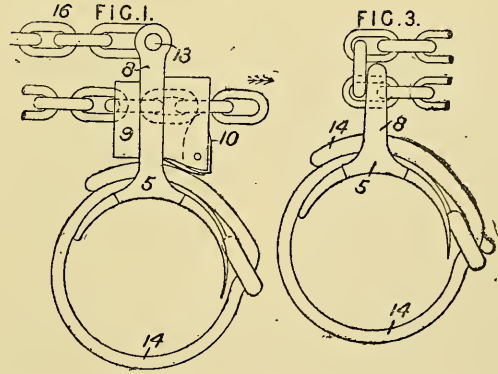
Training and taming horses and other animals.—The apparatus is for making horses, dogs, &c. run round in a circle. The animals are attached by straps &c. *h* to a number of bars *f* which radiate from and rotate round a fixed post *a*, and are kept at equal intervals by ropes, rods, &c. The bars *f* are supported by a ring *d* suspended from a second ring *c*, to which ropes *g* pass to the outer ends of the bars. In the case of long bars, they may be additionally supported by wheels running on a

7083. **Flemming, R.** April 6.

Saddles.—The gullet plates of saddle-trees are flanged at the centre in various ways to strengthen them. Figs. 4 and 7 show sections of two forms, with flanges at A'.



7172. **Gibbings, A., and Peard, J. H. H.** April 8.

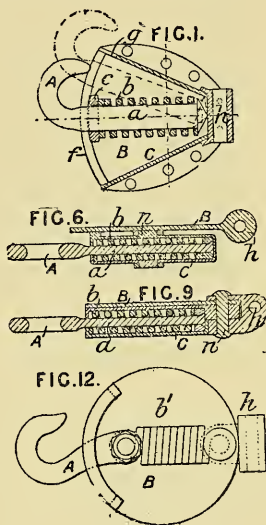


Hobbles.—Fig. 1 shows the form of hobble

attached to one leg of the animal, and Fig. 3, the form attached to the other legs. A chain 16 secures all the hobbles together, its ends being attached to the hobble, Fig. 1, by a screw 13, and a spring pawl 10 attached to the tubular piece 9. The hobbles are fastened to the legs by buckled straps 14 riveted to a curved metal piece 5, 8 formed with an eye in Fig. 3, and with the tubular piece 9 in Fig. 1.

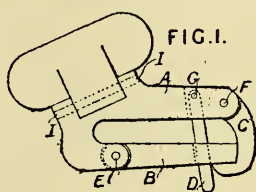
7443. Parkes & Gnosill, (Limited), and Parkes, J. April 11.

Fastening.—Relates to a combined draught or collar plate and spring hook for connecting traces to hames. In Fig. 1, the shank *a* is surrounded by a spring *b* bearing on a washer *c*, which rests against two ribs *f* one on the plate *B*, and the other on the attached box cover *C*. Preferably this is of angular shape to allow adjustment in direction of pull. The shank *a* carries a hook *A* or a ring &c. The point of the hook may lie in the opening between the ribs *f* to prevent detachment, and the side of the box is then notched at *g*. The washer *c* and ribs *f* may be undercut to hold the plate and cover together. The plate *B* is connected to the hame by the eye *h*. In other forms, the box *C* is pivoted at *n* centrally or at its forward end on the plate *B*, as in Figs. 6 and 9 respectively, or a tension spring *b'* may be used, as in Fig. 12. Coiled springs as shown, or other springs may be used.



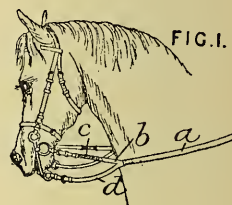
7484. Lorrain, J. G., [Lalame, E.] April 11.

Stirrup straps, suspending.—The stirrup leather is supported by the bar *B* hinged at *E* to the part *A*, and supported by the hook *C* hinged at *F*. The part *A* may be hinged at *I, I*. A rod *D*, hinged at *G*, works in the forked end of the bar *B*. If the rider is thrown with his foot in the stirrup the stirrup leather pushes against the rod *D*, which acts on the hook *C*, and liberates the bar *B*.



7702. Brookes, A. G., [Hocking, E. C.] April 17.

Bridles, reins for. Riding or driving reins *a* are forked at *b, d*, and the shorter arm *b* has a spring *c* or extensible part. On pulling the reins *a* firmly the part *d* comes into action, and has a powerful effect due to the leverage of the bit.



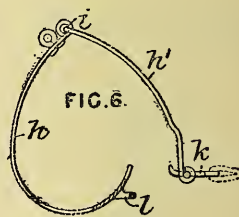
7759. Wolseley Sheep Shearing Machine Co. and Austin, H. April 18.

Horse clippers and the like.—The wear on the comb plates of sheep shearing machines and on the top and bottom cutters of horse-clippers &c. is equalized by forming a groove *a* between the cutting edges of the teeth.

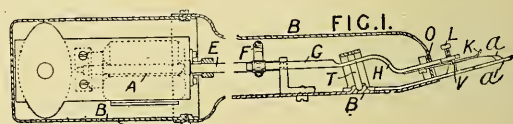


7967. Albery, W. April 22.

Tugs, shaft, Fig. 6, are formed in two parts *h, h'* hinged at *i*, and provided with a hook catch *k, l*, the parts of which separate when pulled outwards.



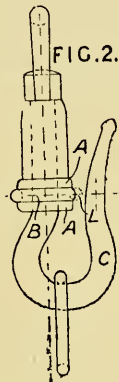
7989. Cox, H. W. C., and Bowmar, G. April 22.



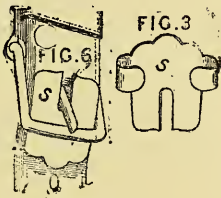
Horse clippers and the like.—Fig. 1 shows a sectional elevation of the clipper for sheep, horses, &c. The clipper is driven by an electro-motor *A*, the spindle of which forms the spindle *E* of the clipper or is geared to it. The spindle *E* has an eccentric *F* rotating between rollers on the arms *G* of a fork *H* pivoted to the casing at *T* and connected to the cutter *a* by pins *V* as usual. A set-screw *L* acting on the spring *K* forces the cutter *a* against the comb *a'*. In a modification, the pressure is effected by a set-screw passing through the casing and bearing against a block between which and another block on the fork *H* antifriction balls are arranged. Hair, dust, &c. is prevented from entering the casing through the slot for the lever *H* by a plate *O* carried by the lever. The case *B* is made in parts to facilitate cleaning &c.

8266. Matthew, W. April 26.

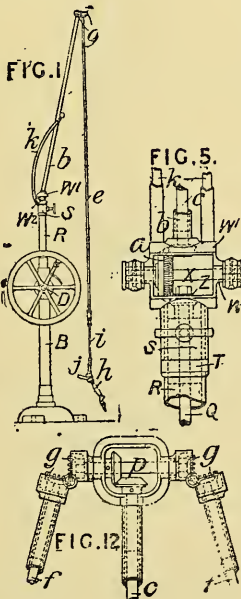
Fastening.—Relates to a hook for back-band chains &c. The barrel of the shackle in which the hook C swivels is formed with two collars A, A enclosing a loose ring B. The collars and ring are grooved at one point, and the link L can only be removed from the hook by turning the tongue C and collar B until the tongue is opposite all the grooves, as shown in the Figure.

**8618. Allison, J. F.** May 1.

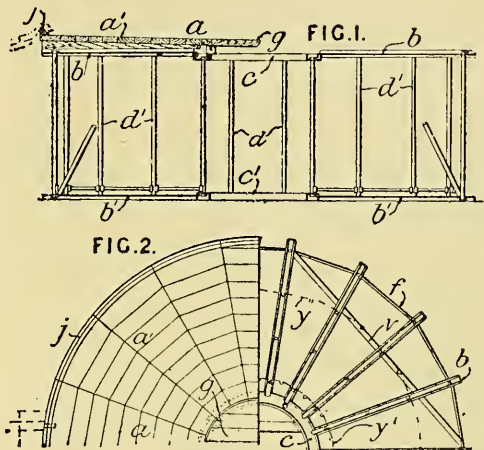
Straps and bands, protectors for. Harness straps are protected from the wear of the buckle by a metal slide S.

**9246. Clark, W.** May 9.

Horse clippers and the like.—Fig. 1 shows an elevation of the complete driving apparatus. The main shaft D, supported by a suitable standard B, communicates motion by spur and bevel gearing to a shaft Q, Fig. 5, in the tube R. The shaft Q carries a bevel wheel Z, gearing with the wheel a on the shaft X, about which the part W¹ of the box W¹, W² can turn. The part W² is fixed to a sleeve S which may be adjusted round the tube R by a thumb-screw. The part W¹ carries the tube b containing the shaft c connected by bevel gearing to the shaft X. The part W¹ also carries two springs k for counterbalancing



the tube b &c. The upper end of the shaft c is connected by bevel gears g, g to the upper end of a shaft enclosed in the tube e, the tubes b, e being connected by a hinge. The latter shaft is connected by a flexible shaft i and bevel gears j, j to the clipper h. Fig. 12 show a modification of the top joint, shown in Fig. 1, for driving two shafts f, f from the shaft c. The shaft c drives the shaft p by bevel gearing, and both ends of the shaft p are connected to a shaft in the same way as in Fig. 1.

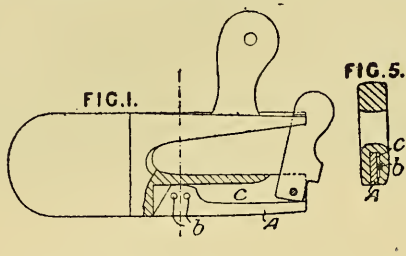
9559. Gautier, E. May 14.

Training horses, platforms for. The platform shown in plan and elevation with certain parts removed, is for training horses and for exhibiting them when trained, and consists of a central drum covered by a floor g, and of radial trusses supporting sloping floor sectors a. A projecting rim j encircles the platform. The drum consists of two rings c, c' of channel section united by vertical pillars d. The trusses consist of pairs of radial bars b, b' united by vertical pillars d. The bars b, b' are of I section and channel section, respectively, and projections on their ends fit into holes in the rings c, c'. The pillars are hollow and contain a central rod screwed at the ends for nuts. Distance bars f and struts v are arranged as shown, and ropes y, y' are drawn tightly round the pillars. The sectors a consist of boards a', a' fixed to radial beams, the bolts in which engage with the flanges of the bar b. The ramp for reaching the platform is built up of two I section beams with cross beams, longitudinal planks, and cross slats for foothold. The Provisional Specification states that the platform can be suspended from the framework of the establishment instead of resting on the ground.

9763. Lawton, C. May 17.

Stirrup straps, suspending.—Relates to the method of fixing the spring A of the saddle-bar. The end of the spring is made with one or more projections b, or is made uneven, and the sides of the groove c

are forced against the spring, which preferably, bears against the end of the groove.



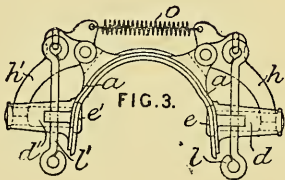
9884. Sleep, W. H., and Sleep, R. H. May 18.

Collars, neck.—Hames are made of metal of U section, as shown at *a*. The hame hooks, with a fixed or removable hinge pin, the loop *d* for hame strap, the terret rings &c. are all attached to the hames by riveting.



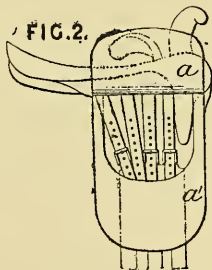
10,299. Bosenius, R. May 24.

Bridles.—Relates to an attachment to the bridle for closing the nostrils in order to restrain or tame the horse. The nostrils are closed by the heads *e, e'* of the sliding bolts *d, d'* actuated by the levers *h, h'*, which are urged outwards by the spring *o*, and are pulled inwards by the links *l, l'* connected to a pair of reins. The whole device is mounted on a plate *a* secured to the nose band.



10,607. Guerra, E. May 29.

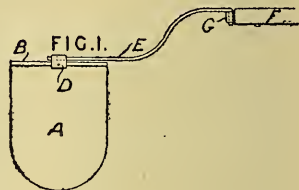
Saddles.—The object is to enable a lady to adjust the girth without dismounting. The flap is made in two parts *a, a'* connected by a spring catch, not shown. By raising the upper part the girth buckles can be reached through an opening in the lower part.



10,620. Parkinson, J. May 29.

Nosebags and food containers.—

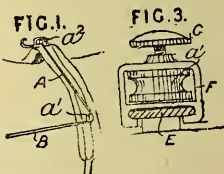
Instead of supporting the food receptacle *A* from the head, it is supported by arms *E* attached by sockets *D, G* to the hinged rim *B* and the shaft *F* or collar. The socket *G* may be replaced by a long tube parallel to the shaft.



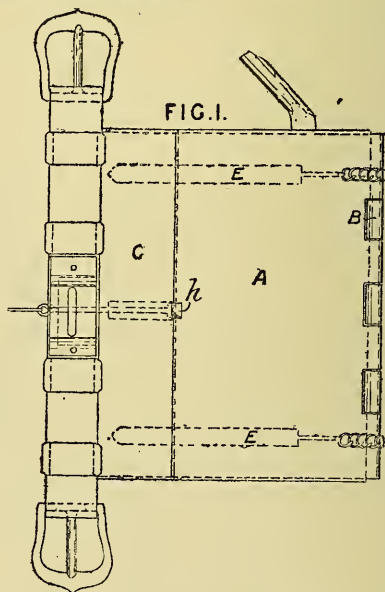
10,854. Robertson, J. P. June 1.

Terrets; fastening

bearing reins. Bearing reins *B* for breaking-in animals and for other purposes are connected to the saddle *A*, belly band or surcingle by pulleys *a', a''*, so that the reins run freely and prevent the bit from being dragged across the mouth as the animal turns its head. The pulley *a'* is adjustably clamped to a strip *E* fixed to the saddle &c. by a screw *G* passing through the pulley and its frame *F*. Terret rings may be fixed in the same way. In a modification, a row of pulleys are fixed to the saddle &c., and are connected together by a strap.



11,062. Gorman, J. June 5.



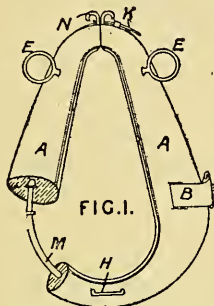
Stopping runaway horses, means for.—Runaway horses, whether ridden or driven, are stopped by

blindfolding them. Each winker C has a blindfolding flap A hinged to it at B, and controlled by a spring E and spring catch *h*. Reins encased in tubes pass from the spring catches within reach of the rider or driver. To equalize the pull on both catches, the reins may pass over a pulley which is fitted in a casing fixed to the dash board, and is provided with a loop for the driver's finger.

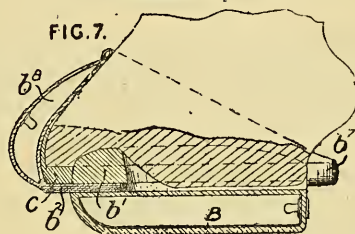
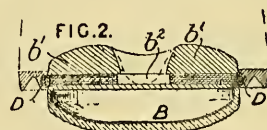
11,089. Bouch-Tremayne, T. J. June 5.

Collars, neck; fastening.

—The hames M are embedded in the collar A, which may be made without a hame groove. They are connected at the bottom by a link H for the breast strap, and at the top by their hooked ends N. A strap K connects the divided ends of the collar. The terret rings E and hame tugs B for snap hooks on the traces pass through the collar, and are secured to the hames.



11,453. Jackson, C., and Mulliner, H. H. June 12.



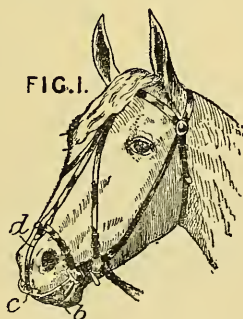
Horse-boots.—Fig. 7 shows a transverse section of the pneumatic horse-boot, which consists of an inflated rubber &c. bag B attached to a plate *b*² of strong rubber and canvas insertion, which in turn is attached to a block *b*¹ of soft rubber fitting the frog, and is prolonged to join a pneumatic pad *b*³ enclosing the hoof, and terminating in pockets *b*⁴ for the heels of the shoe C. The Provisional Specification states that a wire &c. may be tightened around the upper edge of the part *b*³.

11,178. Schröter, A. F. June 6.

Clothing for animals; saddle cloths.—Horse rugs and saddle cloths are made of knitted cotton or linen, with a rough lining knitted to it. The cloths may be impregnated with a waterproofing solution.

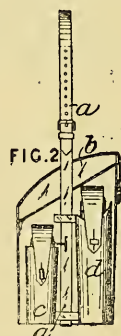
11,226. Lake, H. H., [Simonds, W. E.]. June 7.

Bits.—Relates to a driving bit or device for use either with or without the ordinary bit, especially for controlling vicious horses and for breaking-in colts. A piece *b*, preferably of steel, embraces the upper lip, as shown, a projection *c* bearing against the centre of it. The device is kept in position by a strap *d* or other means, and may be attached to the reins or to the ordinary bit rings, as shown.



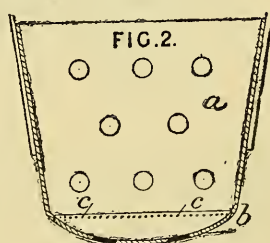
11,775. Edler von Hohenstreben. June 17.

Fastening; saddle-bags.—A lantern is described which, when in use, is strapped to the horse's breast plate, and at other times is stowed away in a leather bag slung to the rear of the saddle. Fig. 2 is a side view of a bag which is slung by the strap *a*. It has a flap *b* secured by a strap and buckle, and, at one side, pockets *c, d* to contain spare candle and oil lamps. The lantern, which has a protective covering of felt to prevent injury to the horse in cold weather, has straps on the back by which it is secured to the breast-plate of the riding-gear.

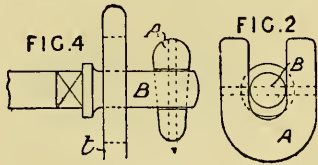


11,940. Taylor, J. H. June 19.

Muzzles for horses are made with the lower leather part *b* blocked to fit into the leather upper part *a* to which it may be further attached by riveting at *c*.



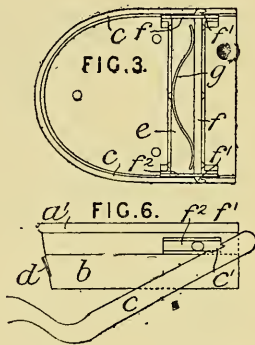
12,071. Sharp, A. R., [Walke, C.]. June 21.



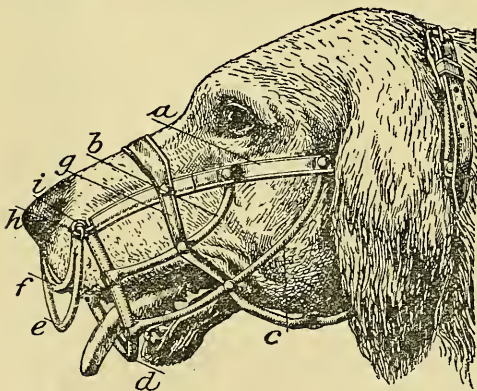
Fastening traces. The trace *t* is fastened by a stud *B* on the shaft or whipple-tree &c., and a slot in the trace which is prevented from coming off by a hinged cross-piece *A* of U or other form.

12,158. Kühn, G. June 22.

Spurs and spur carriers.—The arms *c* of the spur rest beneath a rim *a*¹, Fig. 6, on the heel *b* of the boot and above a projection *d*, and are kept in this position by the hooked ends *f*¹ of a spring catch which engage with notches *c*¹ in the spur. The catch consists of a bar *f* pressed forwards by a spring *g* and sliding in a box *e*, the ends of which are closed by plates *f*² attached to the bar.

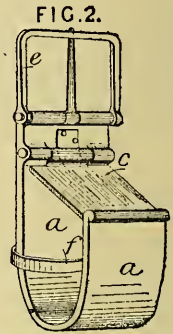


12,213. Schelze, C. June 24.



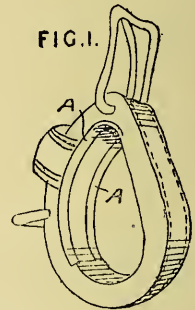
Muzzles for dogs are made with three side straps *a*, *b*, *c* connected by straps *e*, *f*, *d* and *g*. The straps *e*, *f* are hinged to an eye *i* which has a projection *h* to prevent them moving upwards too far. The muzzle enables the dog to smell, eat, or gape without hindrance.

12,227. Bristow, C. June 24.



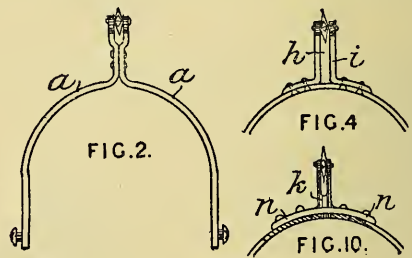
Tugs, shaft.—The shaft tug consists of a U-shaped piece *a* carrying a buckle *e* and loop *f* for the back-band and closed by a spring hinged tongue *c*.

12,350. Croker, F. June 26.



Tugs, shaft; lining.—The wear of the tug against the metal plates on the shaft is lessened by lining the tug with metal bars *A*, *A* let in as shown.

12,539. Brampton, F. W. June 28.

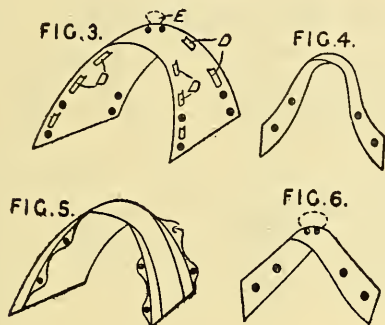


Spurs.—The bow is formed of one or of two strips of sheet metal and the neck is formed by a continuation of these strips *a*, *a*, Fig. 2, or by separate strips *h*, *i*, Fig. 4, or by a forged piece *k* with flanges *n*, *n*, Fig. 10. The neck may be riveted, as shown, or brazed &c.

12,643. Brazenor, G. July 1.

Bridles; saddles; collars, neck.—The leather parts of horse-collars, harness saddles and pads, and the winkers, fronts and rosettes of bridles &c. are made of steel or iron, which may be

enamelled or japanned. In the case of saddles and pads, the whole (except the panels) may be of iron and steel, the seat, skirts, and cantle being jointed together, and, where necessary, brazed and

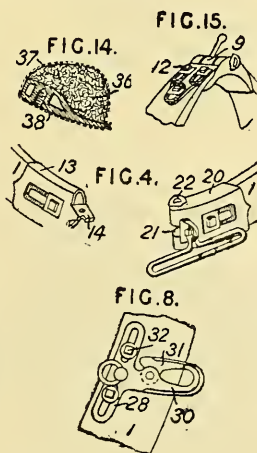


riveted. Beneath the saddle top there may be a plate, Fig. 3, and beneath this a piece, Fig. 5, channelled for the back-band. Strengthening plates, Figs. 4 and 6, are fixed across the withers and under the cantle respectively. The crupper loop is secured at E, Fig. 3. All the metal parts are connected by screws. The panels are secured by loops &c. D on the plate, Fig. 3, and on long metal flaps fixed to the above-mentioned metal parts by screws. In the case of collars, the front consists of a flanged steel tube, hinged or otherwise. Ordinary hames may be used, or a steel bar may be fitted on.

12,734. Ballack, C. A., and Weston, P. B. July 2.

Collars, neck; fastening.

The collar is made of metal, preferably aluminium, in corresponding halves. No hames are used. The section throughout the greater part of the length of the collar is similar to that shown in Fig. 14, with the exception of the screw socket 38. The top is fastened by a hinge 9, Fig. 15, adjustable by bolts 12 through slots. The bottom 1, Fig. 4, is fastened by a coupling in which a projection 14 is held in a slot 21 by a pin 22. The pin and projection are carried by sleeves 20, 13 respectively. The washers in the fastenings described are corrugated to engage with corrugations on the sides of the slotted holes as shown. The bolts are thus locked in the slots. The traces

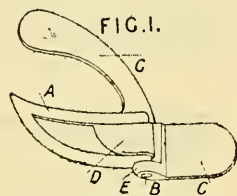


are fastened by a double hook 30, 31 provided with a plate 28 adjustable on the collar 1 by bolts 32 through slots. The terret rings and the rings for the hitching strap screw into sockets 38, Fig. 14. The collar is stuffed with hair or straw &c. 36, Fig. 14, and is covered with leather &c. 37.

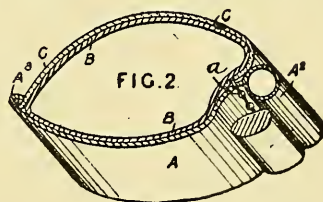
12,899. Denham, W. H. July 3.

Stirrup-straps, suspending.

The bar or frame A supporting the stirrup-strap is hinged to the plate C fixed to the saddle tree. The hinge pin B, slightly inclined to the vertical, is in a piece with the frame A, and is kept in place by the socket E and the turned in end of the flap D. The Provisional Specification states that the hinge pin passes through the bar A and is screwed into lugs in the plate C.

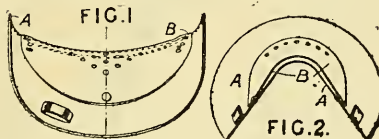


12,921. Turner, D. S. July 4.



Collars, neck.—The collar consists of a steel or other metal shell A, A², A³ shaped as shown and a rubber &c. bag B inflated with air or other fluid, and held in place by a covering of leather &c. C. The covering is attached to the shell at one edge by sewing or lacing a and at the other by a wire &c. fitting into the bead A³. The shell A is either painted or covered with leather &c., and is lined with canvas &c.

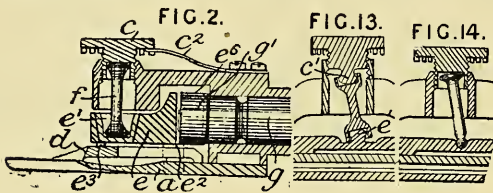
12,969. Barnett, L., [Curtis, D.]. July 4.



Collars, neck.—Relates to ventilating zinc pads for collars. Fig. 1 shows an elevation of the pad, and Fig. 2 a section on a central line. The zinc plate A which bears against the top of the horse's neck has riveted above it a plate B, preferably perforated, beneath which the air may circulate to keep the pad cool.

13,203. Chadwick, W. I. July 9.

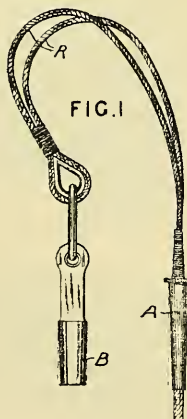
Measuring.—Relates to methods of ascertaining the real dimensions of animals from their photographs. In one method, the animal is photographed at a known distance with a lens of known focus, and, subsequently, a screen with cross lines at known intervals is placed where the animal was and photographed. By double printing, the divisions of the screen are superimposed on the photograph of the animal. In another method, a known scale is placed above the animal and photographed with it.

13,352. Burman, W. H., and Burman, T. July 11.

Horse clippers and the like.—The object is to equalize the pressure between the cutter and comb plates and to simplify the machine. A pressure plate *e* is formed in front with projections *e³* and at the rear with two lateral studs *e²* which fit into holes in the cutter plate *d* and slide in grooves in the comb plate *a*. The projections *e³* bear on the cutter plate as shown. The pressure plate *e* is further formed with a socket *e¹* for the rocking post *f* and with a fork *e⁶* for the crank roller *g¹* of the actuating shaft *g*. Another socket for the rocking post is formed in the screw cap *c*, which can be locked by a spring *c²* engaging with teeth upon it. The sockets have flat bottoms, and the ends of the rocking post form part of the surface of a sphere. Fig. 13 shows a modification, in which the sockets are in the rocking post, and equal spherical knobs *c¹*, *e¹* are formed on the cap and pressure plate respectively. Fig. 14 shows another form.

13,408. Douglas, E. July 12.

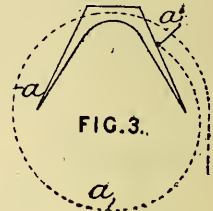
Bridles and halters; fastening.—Loops at the ends of tethering ropes are secured detachably by holders A, B. The holder consists of a flanged cylindrical or tapered stop A fixed on the rope and a sleeve B, which is slotted to pass on to the rope and is then slipped on the stop A, which it



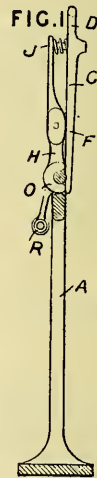
fits. The sleeve is attached to the end of the rope, and a line may be attached to a lug on the sleeve for pulling it off the stop.

13,409. Howells, W. July 12.

Stirrup straps, suspending.—The stirrup strap *a* of a lady's saddle passes beneath the seat, encircles the body of the horse, and is attached to the saddle at *a¹* either directly or by an intermediate strap.

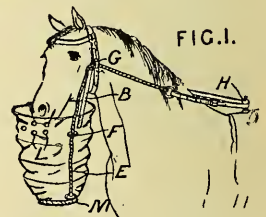
**13,840. Bellocq, C., and Gummersbach, H.** July 19.

Stirrups.—The stirrup leather is attached to the eye D on the bar C, and the eye of the stirrup A is held against the bar C by a bar H hooked at O, provided with a spring at J and hinged at F to the bar C. An arm R projects from the hook O. If the rider falls with his foot in the stirrup, his toe engages with the arm R, and thus frees the eye of the stirrup from the hook O.

**14,006. Ritchie, C. B.** July 23.

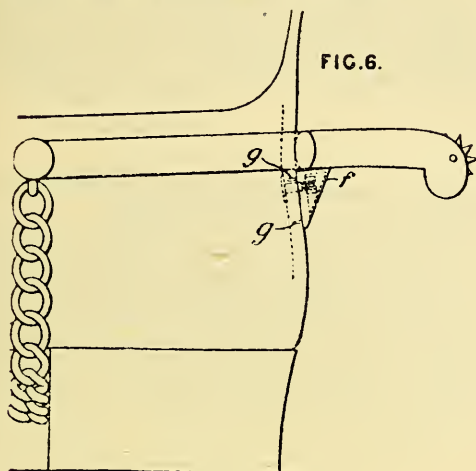
Nosebags and the like.

—The bag for horses and cattle is made of canvas, leather, rubber, &c. and is waterproof, so that it may be used for water. The bag is made with iron hoops or a helical spring, and is arranged to shut up like a concertina. It is suspended by adjustable straps B and cords E, which pass from the bottom of the bag through eyes F and eyes or pulleys G to a strap attached to the bearing rein hook H. The bottom of the bag is of wood or hardware and is protected by an iron hoop or ring M of rope. A diaphragm with a



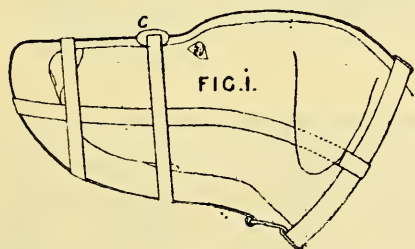
large central hole is fixed near the mouth of the bag to prevent the food being wasted. The holes L ensure ventilation.

14,036. Anderson, A. July 23



Spur-carriers.—The spur-rest at the back of the boot is made of metal and is secured by a bolt and nut, as shown. It is made hollow to enclose the nut and has a hinged or sliding cover *f*, and pins *g, g* are provided at the back, which are forced into the boot and prevent the rest getting out of place.

14,157. Walsh, J. E. July 25.

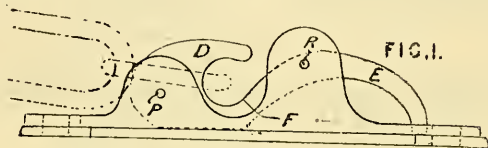


Muzzles for animals.—The dog &c. muzzle, preferably of tinned steel wire or narrow band, is made deep enough to enable the animal to open its mouth, and is preferably of oval section. The joint at C is prevented from chafing the animal by covering it with rubber.

14,384. Corp, J. July 29.

Fastening.—Relates to a slip hook for fastening traces &c. and for coupling railway vehicles. The Figure shows the form for traces. The hook D, pivoted at P, is held in position until released by

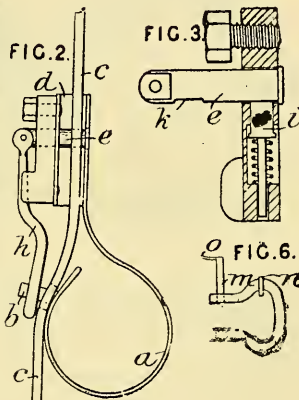
raising the lever E pivoted at R, and bearing against the end of the hook at F.



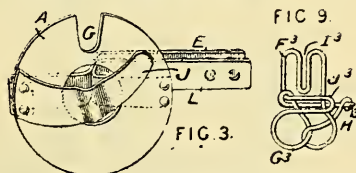
14,665. Duncan, G. G., and Brodie, J. Aug. 2.

Fastening; tugs, shaft; straps and bands.—Relates to a fastening for back and belly bands, shaft tugs, breeching, traces, &c., to a shackle for traces and to protecting straps.

The fastening may be combined with the shaft tug, Fig. 2, where the metal tug *a* is formed with a trough-shaped piece *d* carrying a bolt *e* operated by a spring handle *h*, and held in the closed position by a spring pin *i*, Fig. 3, engaging with the recessed part *k*. The bolt is freed from the pin *i* by turning it by the handle *h*. The shaft tug also carries a pin *b*, which like the bolt *e* passes through the back-band *c*. Fig. 6 shows a shackle for traces, the pin *m* of which is held in its closed position by the engagement of the sliding ring *n* with the projection *o*. To protect straps from wear, they may have wires in their edges; the holes may be protected by metal plates with flanges.



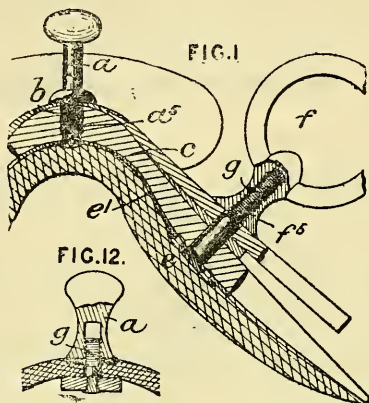
14,843. Abell, H. H. Aug. 9.



Fastening clothing for animals. A fastener consists of a body A having two bent shanks E, L, adapted to enclose part of a horse blanket and be secured thereto. The body has a radial notch G and an opening, in front of which a clipping spring J is riveted. The string to be secured is passed round the shanks E, L behind the body, making one turn, and the free end is brought forward through the notch G, and placed between the spring and body. The body may be of other

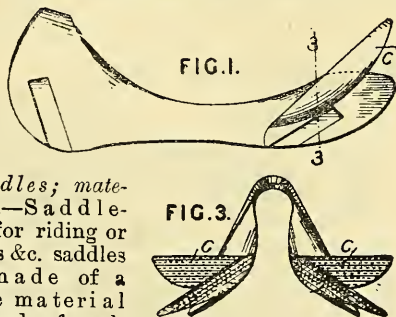
forms than round, and the spring and shanks may be stamped on it. A fastener, made of wire, is illustrated in Fig. 9.

15,138. Cooper, S. A., and Nicholls, J. O. Aug. 12.



Saddles; terrets, and like guide rings.—Bearing rein hooks, terret rings, and the like are fixed to the saddle by a bolt passing upwards into the screwed stem of the hook &c. The rein hook *a*, Fig. 1, has a square internally screwed shank *a^s*, which passes through the tree *c*, and is secured by a screw *b*. The terret ring *f*, Fig. 1, has a screwed stem *f^s* for the bolt *g* formed with a flat head riveted to a plate *e¹* beneath the tree. The rein hook *a*, Fig. 12, for a cart saddle is fixed by a bolt *g* riveted to a broad thick head as shown. The object is to do away with projecting nuts beneath the tree for fixing these parts.

15,206. Thierry, A. de. Aug. 13.



Saddles; materials.—Saddle-trees for riding or harness &c. saddles are made of a flexible material composed of vulcanized rubber or the like combined with woven or textile fabric. The whole may be coated with vulcanite. Fig. 1 shows a riding saddle-tree, and Fig. 3 a section of it on 3-3. The cantle *C* is less flexible than the other parts, and is preferably separable. It may be secured by cement.

15,361. Redfern, G. F., [*Butler Hard Rubber Co.*]. Aug. 15.



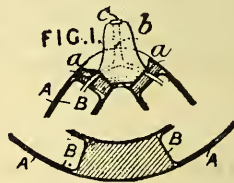
Bridles, blinkers for. Blinkers are made from a dished and perforated sheet of metal *F* covered with hard rubber vulcanized. The edge *C* is perforated, so that it may be stitched to the bridle.

15,690. Garnier, E., and Prescott, S. J. Aug. 20. *Drawings to Specification.*

Traces.—Canvas or like woven fabric is coated with rubber solution or other elastic waterproof cement and rolled under pressure, heating if necessary, to form a solid cylindrical trace. It may be covered with a layer of rubber, rubber composition, or other material, and may then be vulcanized. It may be secured on eyes or in sockets by stitching or riveting through it.

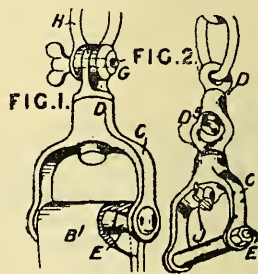
15,766. Meyer, J. Aug. 21.

Collars, neck.—Each side *A* of the collar contains a rubber &c. bag *B*, which may be inflated simultaneously through a tube *b* with branches *a*. A suitable valve is placed at *c*.



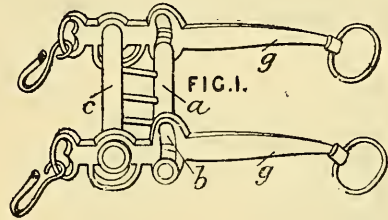
15,999. Smith, S. Aug. 26.

Fastening.—Traces &c. are provided with a detachable connection. The connections between the shackle *C* and trace end *B¹*, and between the shackle *H* and swivel *D*, Fig. 1, or between the shackle *C* and swivel *D*, Fig. 2, are made detachable. In the form shown, screws or bolts *E*, *G* are used, but other forms may be employed. In the form Fig. 2, the shackle *C* and swivel *D* are connected by a fastening resembling breach screw mechanism, the slotted screw being guided and locked by a pin *D²* and spring catch *J* respectively.

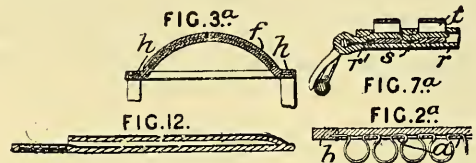
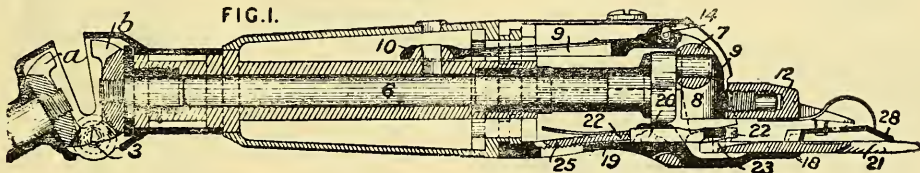


16,335. Sommer, R., and Polzin, E.
Aug. 31.

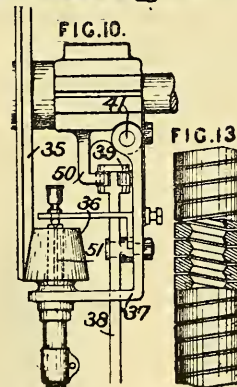
Bits.—The bit, for preventing horses from running away, has the usual mouth bar *c* and a second mouth bar *a* attached to it by parallel rods, as shown. The ends of the mouth bar *a* can move in slots *b* in the cheeks *g*. If the horse takes the mouth bar *c* between its teeth, the cheeks *g* can be pulled into an inclined position so as to press the mouth bar *a* against the lower jaw or the roof of the mouth.

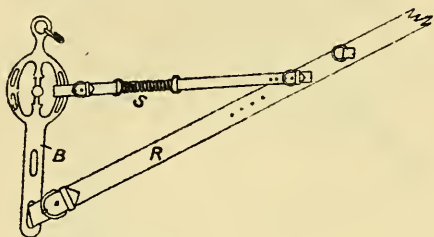
**16,460. Royston, E. R.,** [*Spear, E., and Middleton, F. L.*] Sept. 3.

Fastening, loops for straps for. Relates to a method of forming seamless pockets and loops in leather by slitting, stitching being dispensed with. The invention has many applications, the following being described and illustrated:—The brow-bands, blinkers, nose-bands, and cheek straps of a bridle, collar and saddle pads, shaft tugs, hame tugs, trace carriers or back bands, buckle straps, the splices of reins &c., cartridge belts, shawl straps, pocket cases, spectacle cases, and sheaths for knives, &c. Fig. 2^a shows a cartridge belt with the loops *a* in a piece with the straps *b*. Fig. 3^a shows a shawl strap with seamless loops *h* and a handle formed by inserting a leather core in the seamless hollow handle *f*. Fig. 7^a shows a buckle strap with seamless loops *t* and the parts *r*, *r'*, *s* in one piece. Fig. 12 shows a seamless sheath for a knife &c.

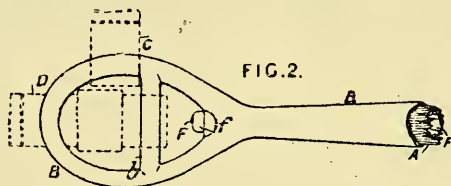
**16,549. Judge, T. A., and Hill, J. A.** Sept. 4.

Horse clippers and the like.—The comb plate 21 has holes for pins 23 on the T-shaped piece 22, the partially threaded stem 25 of which engages with threads on the stem 19 of a spade shaped piece which is pivoted to the casing at 20 and supports the comb 21 at 18. The cutter 28 is moved by the lever 9 screwed to the piece 12. The lever has a cup and ball pivot at 10, bears against the casing by a ball bearing 14, and is moved by the crank pin roller 7 fitting in the vertical groove 8. The crank is formed on the shaft 6, deriving motion from a flexible shaft by bevel gears *a*, *b* kept in gear by a hinged casing. The bevels may be readily disengaged by moving aside hinged spring hooks engaging with the loose pins 3. The flexible shaft, Fig. 13, is made from a bar bevelled internally so as to form screw threads. Should the shaft break, it may be readily repaired by a screw stud. The flexible shaft is driven by bevel wheels 35, 36, Fig. 10. The wheel 36 is carried by a spring arm 37 pivoted at 41, and may be readily disengaged by moving the pivoted arm 38, carrying rollers 39 which wedge between inclines on the fixed arm 50 and the arm 37. The bevel 36 is lubricated from the cup through the channel 51 and side channels.



16,830. **Hobson, M. W.** Sept. 9.

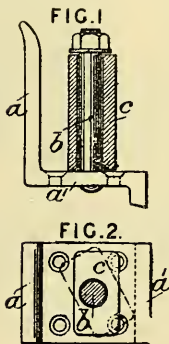
Bridles, reins for. The middle of a curb bit B, or the snaffle bit when two are used, is attached to the curb rein R by a spring S, which prevents the lower part of the rein from coming into action until the spring is sufficiently stretched. The advantages of a mild and a severe bit are thus obtained with a single pair of reins.

16,852. **Bromwich, W. A., and Floyd, C. A.** Sept. 9.

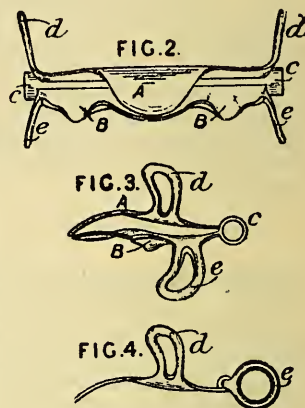
Runaway horses, releasing; fastening back bands and traces. The shaft, of which the front end A is indicated in the side view, Fig. 2, is shorter than the ordinary shaft, so that the attachment B fixed thereto comes opposite the side panel of the back pad. The back band C is attached by passing the end through the loop of the attachment B, lapping it round the upper member thereof and buckling it or connecting it by other means. The trace D is short, and its end is connected to the vertical cross-stay b of the attachment B.

16,855. **Lipsky, A.** Sept. 9.

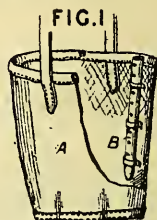
Rein holders. — The reins are gripped between the fixed jaw a and the rectangular jaw c eccentrically pivoted on the pin b fixed to the base-plate a'. By turning the jaw c through 180°, thinner reins may be gripped.

17,401. **McKenny, J.** Sept. 18.

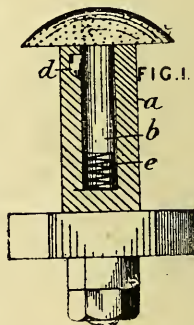
Bits.—The object of the bit is to prevent eating when objectionable, to prevent wind-sucking, and to provide a mouth-ing bit. Figs. 2 and 3 show one form of bit, in which plates A, B, hinged together at c, are provided with loops d, e for straps over the head and under the lower jaw respectively. Fig. 4 shows a form in which a single plate with loop d is hinged to a ring e. In either form, when the horse opens its mouth, the passage is barred by the turning of the plate or plates.

17,531. **Tooley, A. W.** Sept. 19.

Nosebags. — The bag A is made waterproof, so that it may be used for watering animals. It is ventilated by a perforated tube B or its equivalent.

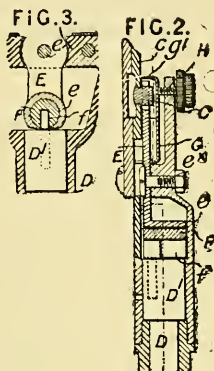
17,542. **O'Connell, A.** Sept. 20.

Fastening traces. A bolt for attaching traces to vehicles is described. The hollow bolt a fixed to the vehicle receives the trace, and has upon its internal surface a slot and annular space. The bolt b, having an enlarged head c, is provided with a projection d, which works in the space in the hollow bolt a. The trace is first placed on the bolt a, then the bolt b is pressed down against the action of the spring e, the projection d meanwhile sliding in the slot, and the bolt b finally rotated so that the projection takes into the annular space.



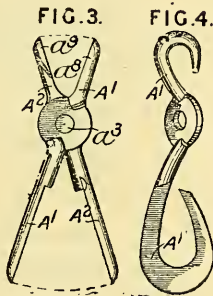
17,923. Gillette, M. G. Sept. 25.

Horse clippers and the like.—The cutter C is reciprocated by the lever E pivoted at e^x and forked to engage with the pin c . The rear end of the lever has a slotted tubular bearing e for a cylindrical pin F, slotted to receive the loose pin f carried eccentrically by the end D¹ of the rotating shaft D. The tension is adjusted by a screw H bearing on the cover plate G, which abuts at g^1 against the cutter C.



18,052. Francis, W. G. Sept. 27.

Fastening, hooks for. The hook for harness &c. is formed of two similar parts A^1 , A^2 , shaped like the figure **3** and pivoted together at the centre a^3 . The parts are flattened and shouldered to fit together, as shown. After a chain has been attached to the upper hooks a^8 , a^9 , the points are hammered down so as to nearly or completely close the gaps and form eyes. The main hook can be opened by separating the parts A^1 , A^2 after the link of the chain attached to the hooks or eyes a^8 , a^9 has been placed near the pivot a^3 .



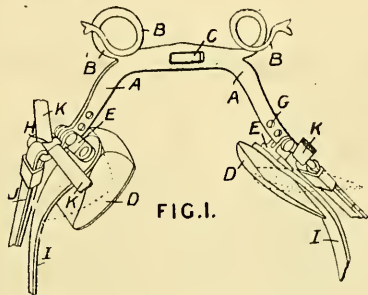
18,110. Peasgood, J. F. Sept. 27. *Drawings to Specification.*

Saddles.—Relates to saddles and saddle numnahs. These are provided with a layer of asbestos cloth or millboard, forming an extra lining or padding, to prevent heat from passing from the horse's body to that of the rider.

18,316. Jackson, H. H. Oct. 1.

Saddles.—Saddles for draft animals are made with a metallic frame A carrying self-adjusting pads D hinged as shown. There may be an eye C for the crupper strap, and there are twisted hooks B or terret rings for the reins. The hooks or rings may be integral with the frame or attached thereto. The integral or attached loop H carries the shaft strap J and other straps K, or the shaft

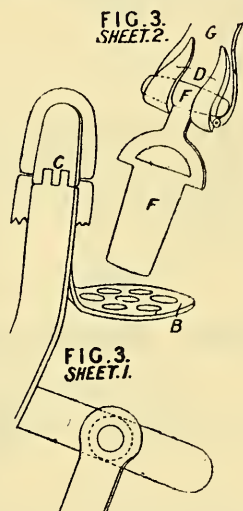
strap may be attached to the bracket E, pad D, or girth I, which is fixed to the bracket E adjustable by means of holes G.



18,469. Williams, C. S., and Rose, C. E.
Oct. 3.

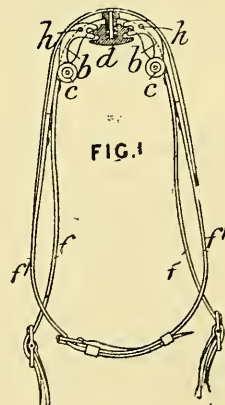
*Saddles; stirrup
straps, suspending.—*

The object is to prevent the habit of a lady rider from hanging upon the upper pommel, and to prevent her from being dragged by the stirrup. The upper part of the pommel is hinged at C and prolonged to form a plate B held down by the rider when seated. The stirrup is attached to a piece F with a T-head fitting between the plate G and hinged arms D beneath the flap. The arms can open out only when the normal pressure of the rider on the flap is removed.



18,754. Hennig, M. C. Oct. 7.

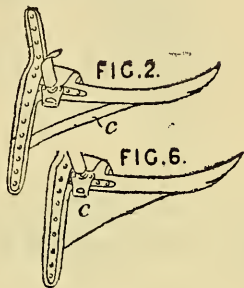
Bridles.—Bridles for riding or driving or for taming animals. The nose-band *f*¹ is provided with nostril closing apparatus actuated by reins *f*. The apparatus consists of a spring button *d* engaging with levers *b* pivoted at *h* and provided with knobs *c*. The nose-band is pulled by the reins so that the button *d* presses against the animal's nose and brings the knobs *c* against the nostrils.



Cattle may be led to the slaughter-house and draft cattle may be tamed by this apparatus.

18,895. FitzRoy, E. M. Oct. 9.

Saddles; materials.—The cantle or back part of the seat of a riding saddle is connected to or near to the points of the tree by a stay *c* partly or entirely of wood, metal, leather, rubber, &c. A better fit and bearing on the animal's back is thus ensured.



19,013. Paley, G., and Sutcliffe, J. A. Oct. 10. *Drawings to Specification.*

Collars, neck; saddles; materials.—Small rubber balls inflated with air are used for padding collars and saddles.

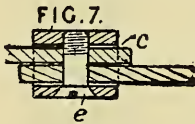
19,134. Zerjal, A. Oct. 11



Clothing for animals.—The surcingle consists of two straps, a strap *a* padded beneath and carrying metal fittings *b*, *d* and an adjustable strap *c* fastened at one end to the fitting *g* passing through the fittings *b* and *g* and carrying at its free end one or more buckles *h*. The fitting *d* has one or more slots *d'* for straps *e* for the buckles *h*. The fittings *b*, *d* may have eyes *b'*, *d'* for straps passing round the breast of the horse to prevent the surcingle from shifting.

19,194. Butler, J. E., Rathbone, F., and Miner, W. Oct. 12.

Fastening straps. The fastening consists of a frame *c* through which a screw *e* passes. Fig. 7 shows a section of the fastening for securing two lengths of strap together. Modifications are described in which two screws are used for the ends of two straps, or a pin and cover plate may be used.



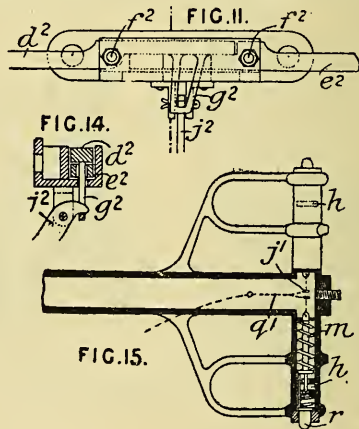
19,566. Spence, R. J. P., and Storrar, R. Oct. 18. *Drawings to Specification.*

Straps are formed of india-rubber or of web or rope treated or coated with india-rubber.

19,788. Sinton, W. F. Oct. 22.

Bridles; straps and bands; materials.—Reins, bridles, &c. are made from strips of unbleached linen, cambric, cotton or hemp fabric folded and stitched together and treated with a compound to preserve them and keep them soft and pliable. When quite dry the strap is rolled and varnished and afterwards dyed as desired. The compound which is to saturate, coat, or paint the linen &c. is a compound of linseed oil, containing 2 per cent. sugar of lead, with gas-coal tar, and gutta-percha dissolved in carbon bisulphide &c.

20,317. Wulff, E., and Vásárhelye, A. Oct. 28.

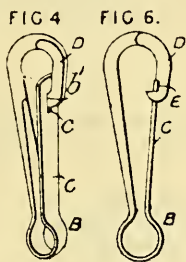


Fastening traces and pole chains. The rapid harnessing and releasing attachments are more especially for four-in-hand harness. The collar chains of the wheelers are attached to the pole head, Fig. 15, by spring bolts *m* bridging over gaps *h* for the end links of the chains. A prolongation of the bolt projects at *r* to facilitate attachment. The pole head for four-in-hands has also other means for attaching collar chains consisting of a hook pointing forwards and closed by a spring tongue. A cord *q'* running through eyes *j'* actuates the draw bolts *m*. The traces are attached to the whipple-trees in the same way, and the cords are joined to the cord *q'*. The fore whipple-trees are attached to the pole head by a horizontal bar in such a way that they may be allowed to fall downwards to give the wheelers when liberated a free course. The bar consists of two parts *d'*, *e'*, Figs. 11 and 14, hinged at *f'* and overlapping. A loop *g'* on the part *d'* passes through a slot in the part *e'*, and is engaged by a lever *j'* held in its engaged position by a spring bolt beneath the pole. A

cord from this bolt joins the other cords above mentioned. When pulled the two parts d^2 , e^2 , with their attached whipple-trees, fall down as before mentioned. The slipping devices may be used for pair-horse harness by removing the bars d^2 , e^2 , the fore whipple-trees, and the cords attached to these parts.

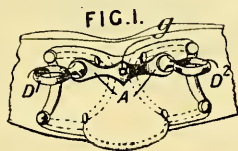
20,390. Breul, R. A. Oct. 29.

Fastening.—Snap hooks for halter chains &c. The hook is made from a single length of wire flattened by cold swaging at one end to form the loop B and spring C, and at the other end D pieces are cut out to form a hook b^1 engaging with an eye c. The spring c may have a T-head E, Fig. 6, engaging with the hooked and forked end of the part D.

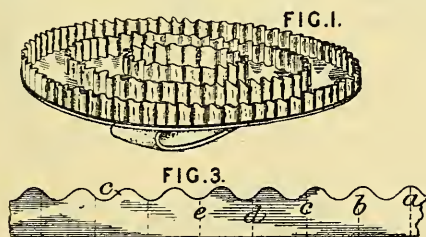


20,463. Nicklin, W. Oct. 30.

Saddles.—Harness saddles are strengthened by a plate A of metal or alloy fixed to the tree by the terrets D^1 , D^2 and the pedestal, the shank of which passes through the hole g. The plate A may be further secured by rivets &c.



20,597. Burke, F. H., and Overend, W. J. Oct. 31.



Currycombs.—The currycomb, Fig. 1, consists of annular toothed and corrugated strips on a suitable backing with a handle. In corrugating the toothed strip, Fig. 3, the cogs of the rolls arrive at the points a, b, c, &c., so that the teeth point in different directions.

20,601. Garnier, E., and Prescott, S. J. Oct. 31.

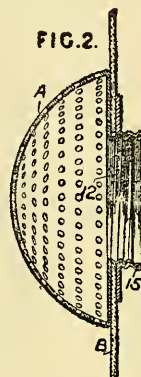
Collars, neck.—The construction of the collar is identical with that described in Specification No. 2572, A.D. 1895, except that in place of the inner

inflated bag, a stuffing or filling of straw &c. is used, or a canvas &c. bag stuffed with cork, flocks, &c.

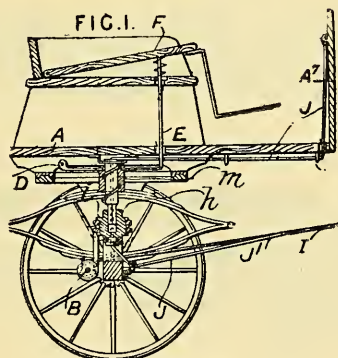
20,934. Burge, M. L. Nov. 5.

Nose-bags.—A ventilator for horses' nose-bags, mail bags, and for all kinds of bags, boxes, and receptacles consists of a perforated or reticulated box A fixed inside the bag B by a screwed flange 12 engaging with a flanged screwed collar 15 on the outside of the bag. The ventilator may be fixed by riveting over the flange 12, or by other means.

FIG. 2.

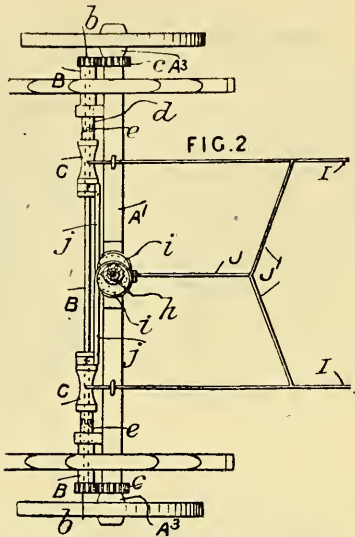


21,218. Mullen, J. A. Nov. 8.



Stopping runaway horses, means for.—Consists of a device whereby the revolution of the wheels caused by the starting of the horse tightens the reins. Behind the axle A^1 (see next page) is mounted a shaft B upon which are loosely mounted sliding concave spools C which can be caused to engage with teeth e on the shoulder d of the shaft B. These spools C are connected to rods j operated by eccentrics i mounted on a vertical spindle h. This spindle has a high-pitched screw on its surface working in a sleeve m which can be depressed by the lever D pivoted at one end to the vehicle A, and connected at the other end by the rod E to the spring-held seat F. When the horse and vehicle are unattended, the device has the position shown in the Figures, so that if the horse starts, the vehicle wheels A^3 rotate the geared wheels c, b, and so the shaft B, whereby the spools C are caused to wind on the reins I and so hold in the horse. By depressing the seat F, the sleeve m is forced down, thus rotating the spindle h, eccentrics i, and by means of the rods j throwing the spools C out of

connection with the teeth *e*. A supplementary rein *J*, *J'* passing up through the spindle *h* to the foot-board *A'* may be employed. In a modified

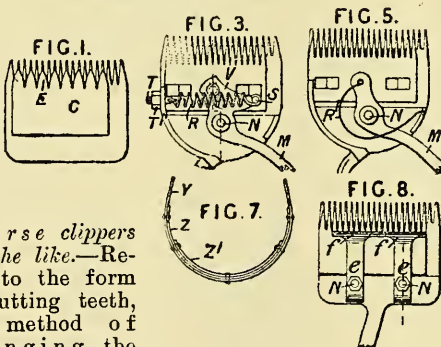


form, the supplementary shaft *B* may be dispensed with, the various corresponding details being mounted on the vehicle axle, the details being slightly modified, if desired.

21,806. Richardson, W., and Richardson, J. Nov. 16. *Drawings to Specification.*

Saddles, girths for. Elastic girths are woven with extra warp threads at the edges, and without the use of wires, so that they will lie equally flat in all conditions.

21,840. Clark, W. Nov. 16.

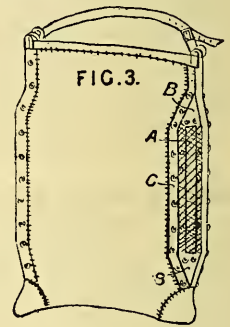


Horse clippers and the like.—Relates to the form of cutting teeth, the method of arranging the spring separating the handles, and the means for pressing the cutter and comb plate together. The cutting teeth of the upper plate *C* may have the form shown

at *E*, Fig. 1. The lever handles may be spread apart by a spiral spring *R*, Fig. 3, fixed at one end to a bolt and nut *T*, *T'*, and at the other end to a stud *S* on the arm *V* of the handle *M* pivoted at *N*. Or the spring may be arranged as shown at *R'*, Fig. 5. Instead of, or in combination with, the spring *R* or *R'*, a plate spring *Y*, *Z*, *Z'*, Fig. 7, may be employed connecting the ends of the handles. The cutter and comb plates may be pressed together by a nut on the pivot *N* bearing on a cover plate, or by nuts *N*, Fig. 8, bearing on springs *e* with broad ends *f*.

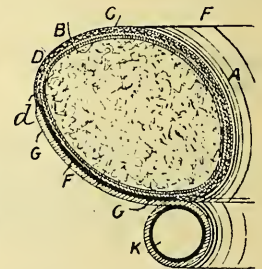
22,108. Kempster, T. Nov. 20

Nosebags; ventilation.—The nose-bag is ventilated on each side by strips of perforated zinc *A* attached to each side of a wooden frame *B* secured to the bag by a strip of binding material *C*.



22,269. Clarke, H. Nov. 21.

Collars, neck; materials.—The body *A* of the collar is stuffed with asbestos enclosed in a rubber bag *B*, which may be inflated with air. The bag *B* is covered with canvas *C*, protected on the outside partly by a wire netting *D* and partly by a metal plate *F*. Outside the netting is a layer of thin leather *d*, and outside the metal plate is a layer of thick leather *G*, continued to form the forewale, which is strengthened by a metal tube *K*.

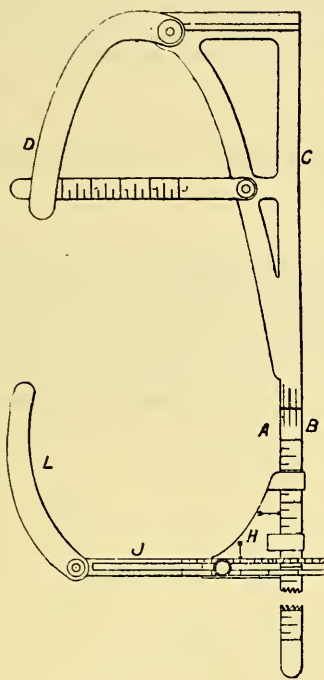


22,453. Bean, C. B. Nov. 25.

Measuring horses for collars. A graduated rod *A* is hinged at *B* to an angle piece *C* carrying a curved arm *D*. On the rod *A* slides a bracket *H*, upon which can be fixed, as required, a sliding graduated rod *J* with pivoted curved arm *L*. The apparatus is fitted round the horse's head and the requisite measures read off from the scales shown.

(For Drawing see next page.)

22,453.

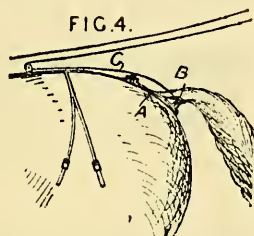


pedestal or other ornament, and the loop D^{II} by a button or the like, or the hook or loop may be dispensed with. The loop and stem D^{III} , or the loop with a bolt forming the stem, may be used independently of the other fittings. The part S may be opened out and provided with antifriction rollers, as shown, or it may be solid and rounded.

24,290. Cave, H. Dec. 18.

Breeching; fastening; horse-breaking and training harness.—

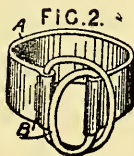
Relates to cruppers for preventing kicking or bucking during breaking-in, &c. The crupper A has a part B for holding up the tail. The parts A, B may be inflated with air or filled with water, and antifriction balls may be threaded on these parts. A rein C may be fastened to the part B, as shown.



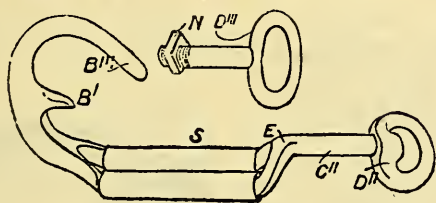
24,327. Warner, F. Dec. 19.

22,703. Storer, W. J. Nov. 27.

Rein holders.—The device is for use with draught animals while left unattended. A noose A is passed round the rim of the wheel, and the reins are passed through the ring B^I and hooked to the vehicle.

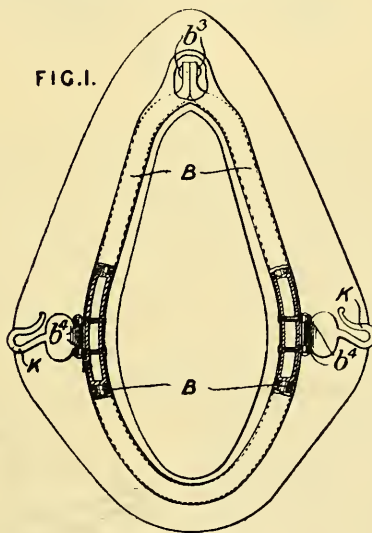


22,844. Stanley, H. A. Nov. 29.



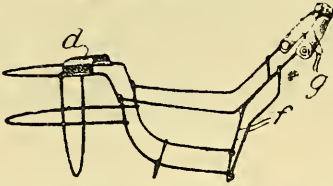
Saddle, gig, cab, and like, fittings for. The bearing-rein hook B^{II} , the back-band guide S, and the crupper loop D^{II} , are all connected together, and are connected to the tree by a hook B^I or screw, rivet, &c., in front and a stem C^{II} which passes through the cantle. The stem C^{II} and loop D^{II} may be in one piece D^{III} , connected to the part S at E, or separately connected to the crupper by a nut N. The hook B^{II} may be replaced by a

FIG. 1.



Collars, neck.—A forged, welded, or drawn plain or galvanized tube B is inserted in the fore-wale of a horse collar instead of the ordinary straw stuffing, thus preserving the collar and enabling hames to be dispensed with. The draft hooks K are attached to eyebolts b^4 fixed in the tube, the ends of the tube being flattened and secured with a rivet b^3 . The tube may be covered with leather or coated with brass.

24,458. Vargyas, E. de. Dec. 20.



Muzzles for animals.—The dog-muzzle is made of wire, with leather &c. bands *d*, *g*, and has the form shown. The band *g* and wires *f* pass round the neck to keep the muzzle on.

24,802. Pottle, A., and McCreery, J. Dec. 27.

Clothing for animals; saddles, girths for. Saddle girths, body rollers, and bandages for animals are

made elastic by inserting one or more springs *E* of rubber, elastic web, flat coiled wire, &c. between the attaching buckles *G* and the end or an intermediate part of the plain web body of the girth &c. In the Figure, representing a girth, the

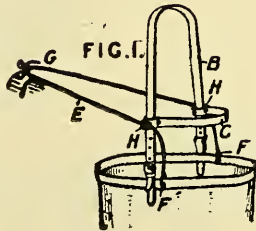


springs *E* are attached to loops *C*, *C*, those at one end being connected to the leather &c. straps *B* sewn to the web *A*, and those at the other end to the strap *D* carrying the buckles *G*. The webbed part *A* is looped, as shown, so as to tighten only when the springs are under considerable tension. A strap *F* keeps the springs in position.

A.D. 1896.

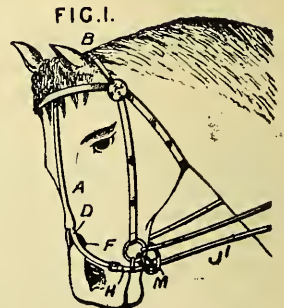
120. Tooley, A. W. Jan. 2.

Nose-bags, suspending. The animal is enabled to reach his food more readily by the cord &c. *E* fixed to the bag at *F*, *F* and connected to the bearing rein hook *G* or other like part of the harness. The cord *E* runs through loops or pulleys *H* on the ordinary strap *B*, or the nose-band *C*, or part of the bridle. The nose-band *C* may be replaced by the hooks on the strap *B* engaging with the bridle.



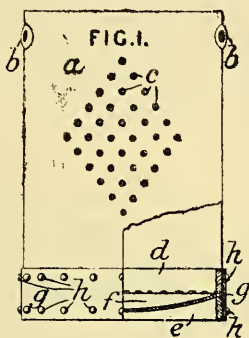
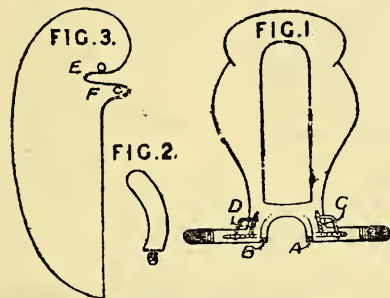
437. Crawford, W. Jan. 7.

Stopping runaway horses, means for; bridles.—The nostrils are closed up by pads *F* on straps *D* supported by the strap *A* attached to the crown strap *B*. The straps *D* are buckled to straps *H* which pass through a loop in the strap *M* hooked to the bit and are continued to form either a single rein *J* or a pair of reins.



587. Meyers, J. C. Jan. 9.

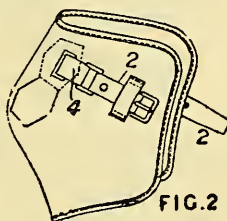
Nose-bags.—The concave or other shaped bottom *f* of enamelled or perforated metal, or wicker &c. is fitted between two wooden hoops *d*, *e* to which the canvas &c. *a* of the bag is fixed by nails or rivets *h* passing through a band *g* of leather, zinc, &c. Eye-lets are arranged at *c* for ventilation, and at *b* for the suspending rope &c.

**689. Kidman, J.** Jan. 10.

Saddles for ladies. The tree has reversible fittings to enable ladies to ride on either side. It is cut back, as shown in Fig. 1, and provided with screw sockets A, B and C, D for the movable near head, Fig. 2, and leaping-head respectively. The tree is suitably padded and covered, and is provided on each side with flaps like the ordinary off-side flap. A separate leather flap, Fig. 3, is attached to the side of the saddle on which it is required by the screws of the near and leaping heads; these screws pass through the holes E, F.

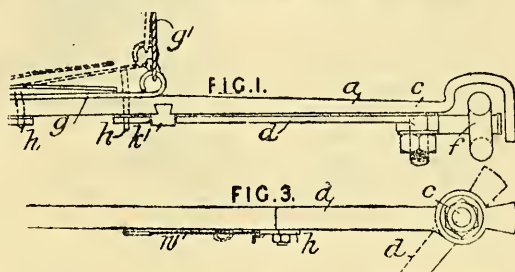
956. Elliott, F. Jan. 14.

Horse-boots.—The fixing strap 2, instead of passing wholly outside the boot, enters it for part 4 of its length so as to bear on the horse's leg either directly or with only the lining between them. The central part 4 of the strap may be of rubber.

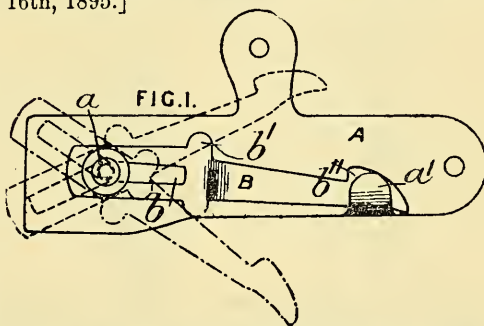
**1053. Marquardt, J.** Jan 15.

Fastening; runaway horses, releasing.—Horses are released from vehicles and horse-gears by a slipping device controlled by a cord. Figs. 1 and 3 show the means applied to a vehicle and horse-gear respectively. In Fig. 1, the traces are attached to

rings *f* on arms *d*, which are pivoted at *c* to the whipple tree *a* resting against tops *k'*, and are kept in place by pins *h* on a spring plate *g* controlled by



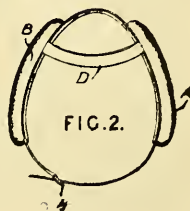
the cord *g'*. In Fig. 3, the trace is carried by an arm *d* pivoted at *c* and held by a lever *h* controlled by a cord *n'*. By pulling the cord, in each case, the horse is released.

1165. Biebuyck, G. Jan. 16. [Date claimed under SEC. 103 of PATENTS &c. ACT, 1883, July 16th, 1895.]

Stirrup straps, suspending.—The stirrup-strap is suspended on the bar B between the projections *b'*, *b''*, and the bar is supported at one end by a button *a* and at the other by a hook *a'*. The button and hook are carried by the plate A fixed to the saddle tree, and the button works in a slot *b* in the bar B; or the plate A may be slotted for a button on the bar B. A spring pin near the hook *a'* may be used to prevent the bar from leaving the hook too readily; or, for the same purpose, the bar may be bent inwards. The dotted lines show how the bar turns to disengage the stirrup-strap.

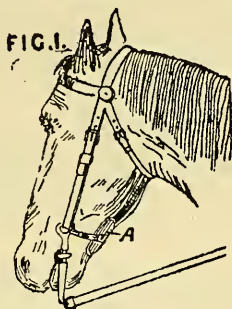
1395. Burt, W. H. Jan. 20.

Clothing for animals.—Pads A, B are strapped to the sides of a horse &c. to form a mattress when it lies down. They are strapped together in front, at the top, and beneath, and have a crupper D at the rear. These pads may be used with the ordinary horse blankets.

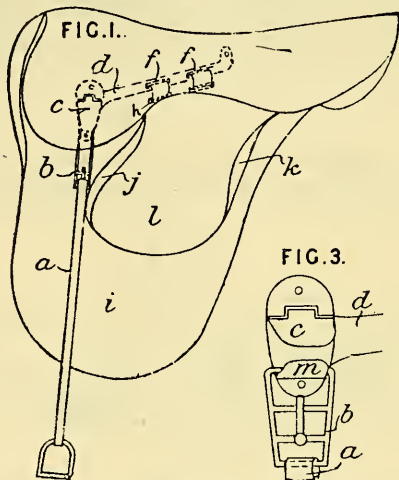


2160. Farn, W., and Clarke, T. U. Jan. 30.

Bridles.—A pad A fitting the gullet of the horse is attached to the bit, as shown, to afford additional control. A pull on the reins forces the pad inwards.



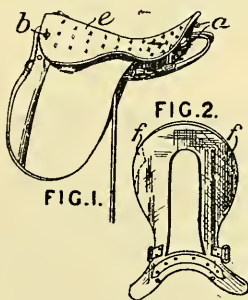
2268. O'Connor, S. Jan. 31.



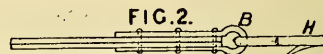
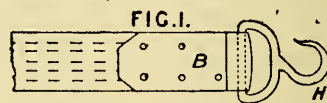
Stirrup straps, suspending; saddles.—The stirrup leather *a* is suspended at the front of the flap *i*, and is kept from the knee by a roll *j*. There is another roll at *k* on the other side of the padded part *l*. The buckle *b* of the stirrup leather is suspended from the bar *d* by a hook *m* closed by a safety spring plate *c*. The bar is riveted to the tree and is slotted at *f, f* for the girth, the flaps being also slotted so that the girth may pass behind them.

2313. Barnsby, J. A. Feb. 1.

Saddles.—The seat *e* is suspended at the back by two staples *a, a* fixed to the cantle of the tree and passing through holes in the seat; it is suspended in front by two screw eyes *b*, which screw through the tree and into sockets in the panels. The cantle of the tree is similar in form to the seat instead of being cut away at *f*, Fig. 2, thus simplifying the construction.



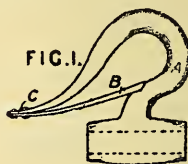
2378. Schmitz, J. Feb. 1.



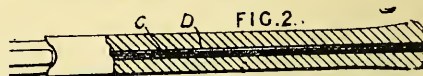
Bridles; traces; materials; fastening.—Traces and driving reins are made of several layers of a fabric of cotton, mohair, balata, or the like impregnated with resin or the like. The layers are stitched together as shown. Hooks *H* or chains are attached by a plate *B* doubled and riveted, as shown.

2386. Mullin, J. Feb. 3.

Fastening back-band chains to the shafts. The mouth of the hook *A* attached to the shaft is closed by a spring *B* riveted to the point *C*.

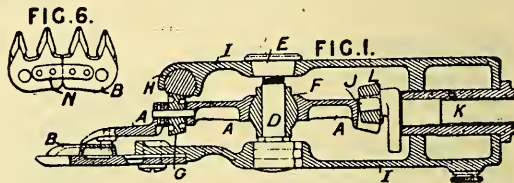


2631. Levi, S. H. Feb. 5.



Whips, handles for, are cut down the centre, and in a recess formed in each part is placed one or more strips of aluminium *C* or other suitable metal, having a strip or india-rubber *D* on each side thereof. The Figure shows the invention applied to a cricket bat.

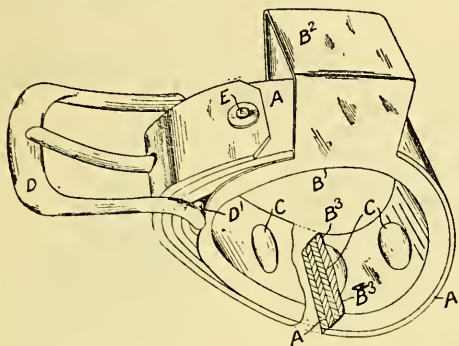
2662. Gray, A., [Newall, J. W.]. Feb. 5.



Horse clippers and the like.—The cutter lever *A* vibrates about the pin *D*, which may be adjusted to vary the tension of the lever by the nut *E*; or the pin may be fixed and the nut made to screw upon its lower end. The pin *D* carries a sleeve *F* with a spherical enlargement upon which the lever *A* bears, as shown. The lever is suitably forked at the rear for a conical roller *L* on a crank pin *J*, which points to the intersection of the axes of the pin *D* and crank shaft *K*. Or the bearing in the fork is cylindrical for a spherical roller on a crank pin parallel to the shaft *K*. The front of the lever carries a conical roller *G*, which takes a bearing on

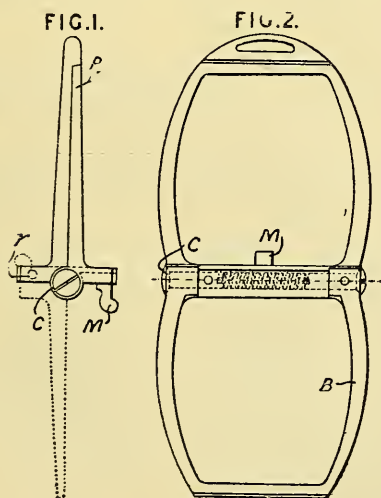
the flat or conical face of a rod H free to turn in the casing I. In a modification, the rod H is fixed and bears against a flat face on a ball recessed in the lever A. The cutter B, Figs. 1 and 6, is made in sections united by a strip N or part of the cutter itself so as to be elastic, and the fork A has as many points of contact with the cutter B as the cutter has sections.

2688. Tyree, W., [Jones, F. N.]. Feb. 5



Tugs, shaft.—The tug is of leather A lined with metal B. The metal may be of channel form, as shown, and may have a layer of rubber between it and the leather. The metal may be perforated at B³ to allow the rubber C to protrude. The layers of leather are preferably riveted together at E. The bar D¹ of the usual buckle D may pass through the metal B or otherwise. The loop B² may be of metal in a piece with or brazed &c. to the metal B, or the loop may be dispensed with.

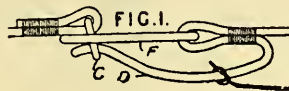
2867. Huguenin, F., and Huguenin, A.
Feb. 7. [Date claimed under SEC. 103 of
PATENTS &c. ACT, 1883, July 8th, 1895.]



Stirrups.—A separate bow B turns down on a spring hinge C to form a mounting step. The

step is kept in position by a projection M engaging a spring r.

3079. Westwood, C. J., and Baxter, J. G. Feb. 11.



Dog collars; fastenings are provided with or formed of a plate F, having an opening in one end through which a slotted plate C can pass. A tongue D is passed through the slot in the plate C, and on withdrawal allows the parts to separate.

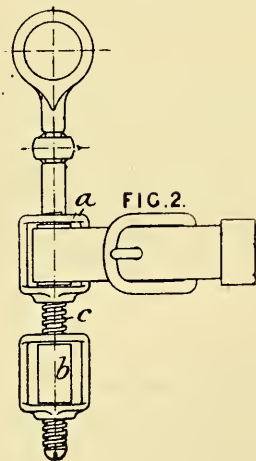
3393. Berg, T. Feb. 14.

Tethering animals, pegs for.—The pin consists of a helical coil a pointed at b, and formed with a loop or handle at d. The link h, to which the tethering rope is attached, is carried by a sleeve c turning upon a straight part of the pin against a shoulder f.



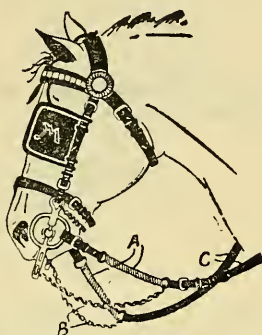
3475. Tonge, J. H. Feb. 15.

Bits.—The loops a and loose ferrules b for the reins are made adjustable on the side bars c to vary the severity of the bit. The loops and bars may be screw headed as shown, or the loops may carry a spring pin or set-screw to engage in notches &c. in the bars.



3571. Maxwell, E. Feb. 17.

Bridles, reins for.
The object is to obtain with a single pair of reins the advantages of both curb and snaffle reins. The reins C are attached to the bit by springs A and loose chains B. A strong pull on the reins extends the springs and brings the chains into action.

**3617. Sedgwick, T. Feb. 18.**

Scrapers, horse.—The scraper, for drying a horse after washing, consists of a strip of rubber *d* strengthened inside or out by metal plates and terminating in handles *a*. The Provisional Specification states that flat wire coils or vulcanite &c. plates may be used instead of the metal plates.

4212. Meyhew, F. W. Feb. 25.

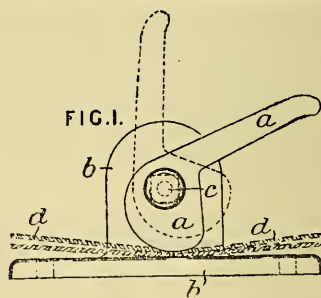
Pads for; saaddles, saddle cloths, numnahs, and the like. Relates to air pads for the panels of saddles, and for saddle cloths and the like. The pad is so shaped that when inflated it is thicker where the greatest pressure occurs. This may be effected by making the pad A of wedge shape, as shown in Fig. 2, which represents a section on one side of a numnah; or the material may be thinner at *a*, or attached to *a'* for the same object.

FIG. 2.

**4360. Jacks, F., and Lazarus, A. Feb. 27.**

Rein holders.—The reins *d* are gripped between the base plate *b* and the cam shaped end of the lever *a* pivoted at *c* to a bracket projecting from the base plate.

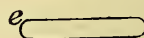
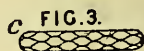
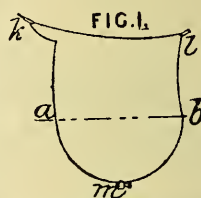
(For Drawing see next column.)

4360.**4740. Weightman, W. F., and Weightman, A. March 13.**

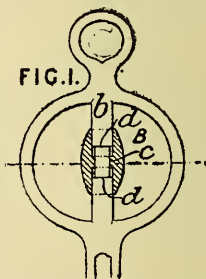
Muzzles for dogs.
A metal piece D is riveted to a leather muzzle at A, B, and C to prevent this part of the muzzle from being cut away and the muzzle thus rendered useless.

**4791. Billings, F. W. March 3.**

Padding with air or water in suitable receptacles, cellular, tubular, or corrugated, &c. Neck and breast collars, harness and riding saddles and bands are mentioned. The harness may thus be used for storing water for use on military service. Fig. 1 shows a riding saddle with valves or cocks *k, l, m* for admitting air, admitting water, and drawing off the water respectively. Fig. 3 represents two sections on *a-b*, Fig. 1; *c* shows a cellular reservoir and *e* a simple reservoir.

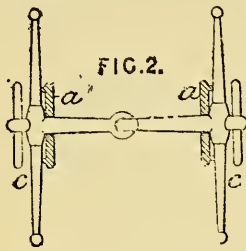
**5324. Wedge, J., Wedge, J., and Wedge, D. March 10.**

Bits.—To prevent the lips of a horse from being nipped between the ends of a sliding mouth bar *c* and the shoulders *d* on the bit cheeks *b*, the ends of the mouth bar are extended, as shown at B, to cover the shoulders. In a modification, the shoulders are formed on the extension B, and a collar is formed on the bit cheeks.

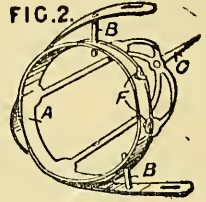


5325. Dewsbury, A. March 10.

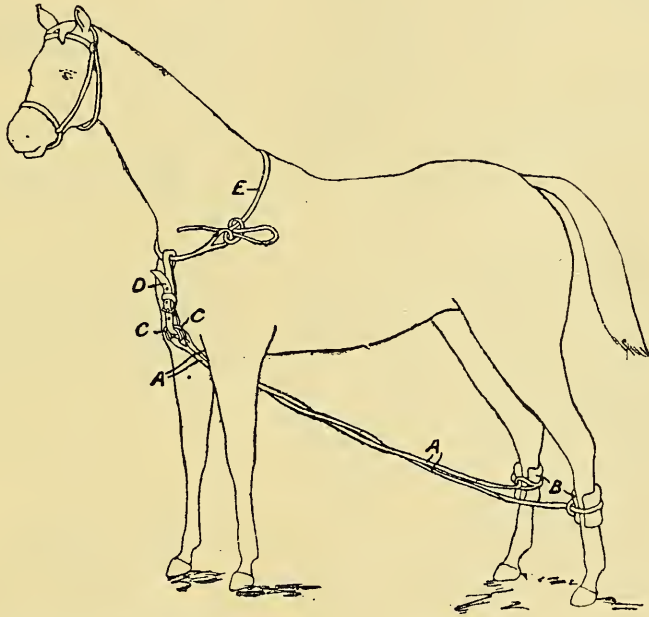
Bits.—Discs *a* of rubber or rubber composition are placed in the position shown to protect the horse from the chafing of the bit cheeks *c*. In some cases the disc is threaded on the mouth bar, in other cases it is slit radially, placed in position, and then joined up again.

**5692. Kellett, R. B.** March 13.

Muzzles for ferrets. One or more spikes *C* are fixed to the muzzle to prick the rabbit &c. and so urge it on before the ferret. In the form shown, the muzzle is fastened by the pins *B*, *B*, which take behind the fangs of the ferret. The pins are carried on a spring band, which may be locked close to the ring *A* by thumb nuts *F*. Other means may be employed for fixing the spikes; the nose or other convenient part of the ferret.

**5775. Castle, T.** March 14.

Hobbles.—Relates to hobbles for the use of mares while being covered. The hind legs are held by two straps *A*, which are formed with nooses carrying pads *B* and with loops &c. *C* for the buckled strap *D*, kept in place by a rope *E*, preferably of cotton. On pulling the slip knot in the rope *E*, the leg loops spring open, and the animal is freed.

**6034. Brazenor, G.** March 18.

Fastening; materials.—Relates, firstly, to certain buckle attachments; secondly, to the use of metal for certain parts of harness; and, thirdly, to the application of enamelling to metal parts. The buckle attachments are called savers, tabs, and clips respectively. Fig. I, Sheet 1, shows a metal saver for a trace or back-band buckle. The part *R*, *R* fits beneath the front bar of the buckle, the tongue of which passes through the slot *A*. The strap loop, Fig. IV, Sheet 1, is secured to the saver by a bar *E*, Fig. III, Sheet 1, the screw *D* of which passes through the holes *D* in the saver and loop. The slot *A* and hole *D* in the saver may be replaced by several slots and a large hole, through which the bar *E* may be passed; or the loop may be riveted or sewn to the saver. Fig. B, Sheet 2, shows a metal tab for a breeching tug buckle. The tab is secured in place by rivets &c. Other tabs are used

for the buckles of hame and shaft tugs, traces and back-bands, or for loin straps, breast plate, or trace carriers, or bridle face drops. Fig. I, Sheet 4, shows a metal clip for attaching a buckle to a strap and carrying a metal or leather loop. The loop passes round the part *B* and between the projections or distance pieces *A*, *A*. There may be several of these distance pieces for several loops, or for taking into slots in a long tubular loop in the case of breeching tugs. The clip may be used over the buckle bar, as shown, or under it, or two clips may be used, one over and the other under. These clips are useful for repairing purposes. The clips may form a complete ring to serve for shaft tugs. Steel or other metal is used instead of leather for making nose-bags (with perforated upper part), crupper bodies, breast collars, cart breeching, and cart belly-band ends, in addition to the articles mentioned in Specification No. 12,643, A.D. 1895, namely, saddles,

carriage and other pads, winkers, bridle fronts and rosettes, collars, and housings for saddles and

FIG. I. (Sheet 1)

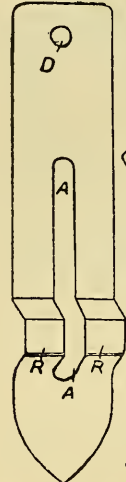


FIG. III. (Sheet 1)

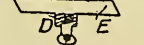


FIG. IV. (Sheet 1)

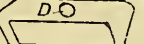
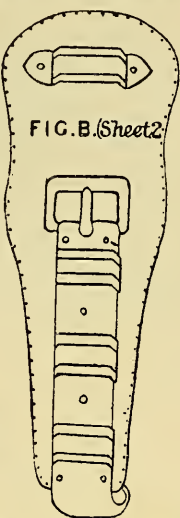


FIG. I. (Sheet 4)

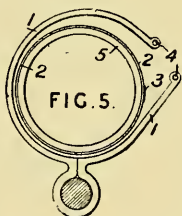
FIG. B. (Sheet 2)



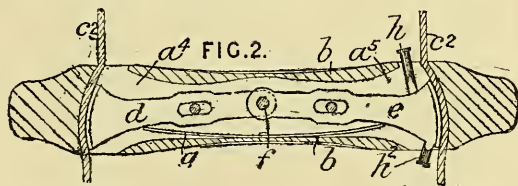
collars. These and other articles, such as buckles and tabs, clips and savers for buckles, may be enamelled.

6166. Brambley, S. H. March 19.

Collars, neck.—Fig. 5 shows a transverse section of one side of the collar. The external covering 1 is formed of leather or like material and encloses a canvas case 2, within which is an inflated rubber tube 5 fitted with a nipple and valve. The case 2 may be laced together at 3 or connected by interlocking wired folds or by other means. The outer casing may also be closed by interlocking wired folds 4, 4. The canvas case 2 may be dispensed with.



6399. Welsh, J. March 23.

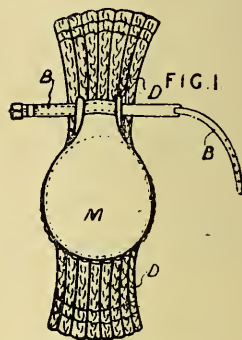


Rein holders; horse-breaking harness.—The rein holders are for hand use for driving, hunting, breaking-in, and like purposes. The reins c^2 are gripped against the sides of the slots a^1, a^5 in the handle b by cam ended levers d, e pivoted together at f or pivoted separately. A spring g urges the cams against the reins, and studs h, h^2 are provided for moving the cams when desired. The Provisional Specification states that wedges may be

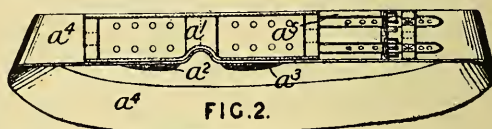
used in place of the cam levers, and that for driving three or four horses the gripping levers and the gaps for the reins are duplicated.

6552. Cuthbert, E. G. March 25.

Knee caps.—The knee cap consists of a plate of leather M padded with wool crochet pads and secured to a knitted sleeve D . It is fastened to the animal's leg by a strap B .



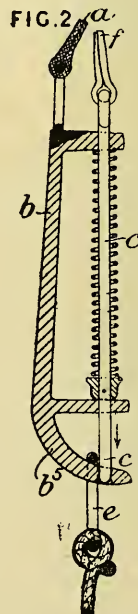
6957. Richardson, W., and Richardson, J. March 31.



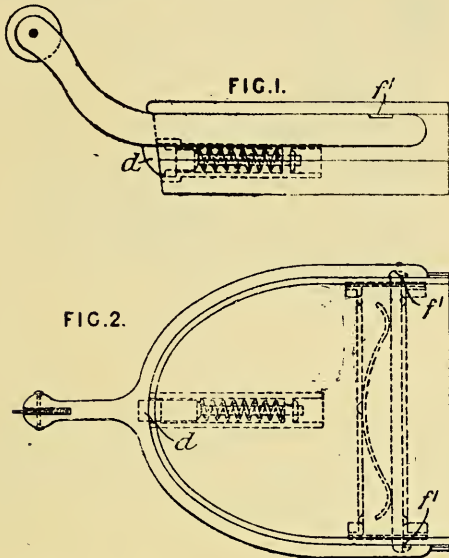
Clothing for animals.—Relates to rollers, which are made of an elastic material a^1, a^5 , woven as described in Specification No. 21,806, A.D. 1895, and a preferably non-elastic part a^2, a^3 . The parts a^1, a^5 are of unequal length, so that the fastening comes at the side as shown.

7097. Brierley, W., [Eichelmann, P.]. April 1.

Dog leashes, slipping device for. Consists of a slip hook b attached to a strap a for buckling round the waist of the huntsman, and a strap f running along the strap a for releasing the hook. A ring e is attached to the dog collar and engages with the hook, the curved end b^5 of which is closed by a spring bolt c guided by arms and actuated by the strap f .

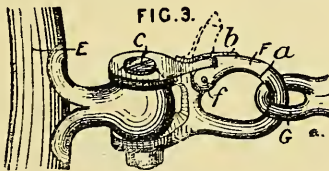


7626. **Kühn, G.** April 10.



Spurs and spur carriers.—Improvements on the invention described in Specification No. 12,158, A.D. 1895. Instead of a fixed projection at the back of the heel, a spring projection *d* is arranged; and instead of the spring hooks *f'*, fixed hooks may in some cases be used, or the ends of the spur bow may engage with the heel itself.

7937. **Garnier, E., and Prescott, S. J.** April 15.

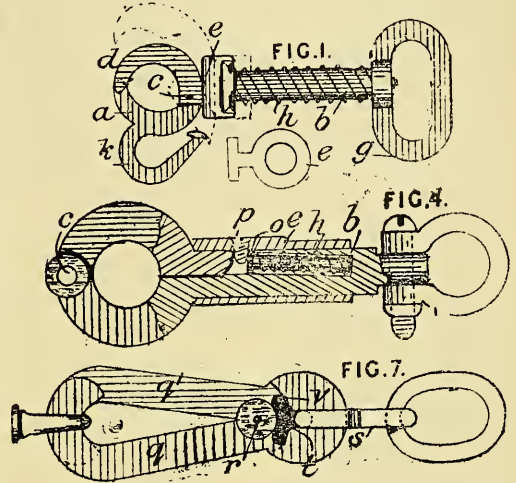


Fastening.—Relates to a hook or shackle for connecting traces to the hames or breast collar or breeching to the shaft. The hook is connected to the hame *E* by a bolt *C*, and is provided with a tongue *F* hinged at *f* and bevelled at *a*. The tongue may be normally kept locked by its weight or by a spring *b*. *G* represents the eye on the end of the trace.

7980. **Wood, A.** April 15.

Fastening.—Relates to slip-hooks for fastening pole straps and chains, traces, reins, leads, dog leashes, &c., and to a double hook for fastening the slip-hook to a chain &c. In the slip-hook, Fig. 1, the part *d* is pivoted at *e* to the part *a* formed with the shank *b* carrying a shackle *g* or hook &c. The

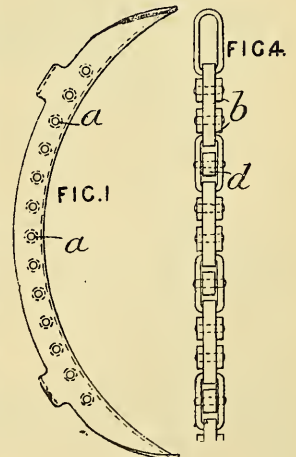
part *a* may be formed with a hook *k* for one end of the slipping cord. A spring *h* on the shank *b* presses a ring *e* over a prolongation of the part *d* so as to keep it from opening out until the ring *e*



is pulled back, as shown in dotted lines. A releasing cord may be attached to the ring *e*. Fig. 4 shows a modification, in which the hinge *c* is at the end of the hook, and the spring *h* is within the shank. The spring presses a conical or other headed pin *o* against a stud *p* on the locking sleeve *e*. The stud *p* may run on a bayonet slot or groove, and be kept in the end of it by the pin *o*. Fig. 7 shows the double hook formed of two parts *q*, *q'* pivoted at *r* and so slotted at *t*, *v* that the hook can only be opened when the special link *s* is placed in the proper position.

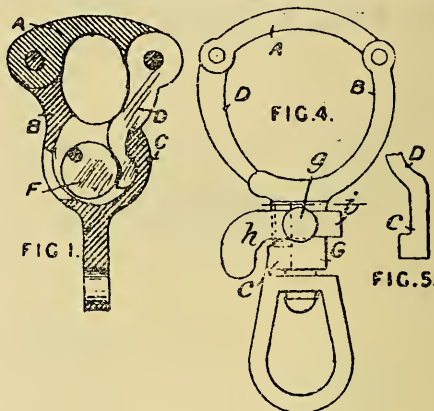
10,192. **Robinson, P.** May 13.

Saddles; back-bands.—The object is to reduce the friction between the saddle and back-band. The saddle plate, Fig. 1, is provided with a number of anti-friction rollers *a*, or the back-band is built up of a number of links with anti-friction rollers *b*, *d*. The Provisional Specification describes the use of rollers, the axes of which are formed by projections or paps.

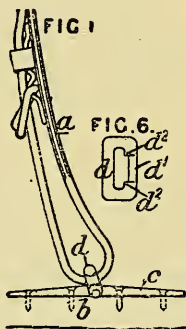


10,249. Rhodes, J. May 13.

Fastening.—Relates to slip hooks, shackles or couplings for harness and other straps, &c. The fastening consists of a body C, G with a projection B, to which is hinged the link A carrying a second link D with a bent or hooked end c. In the form, Fig. 1, the end c is secured by an eccentric F provided with a handle (not shown). In the form, Fig. 4, the end c is secured by a swivelling ring i slotted at h to allow the link D to pass and provided with a set-screw g.

**10,557. Burgess, F. T.** May 16.

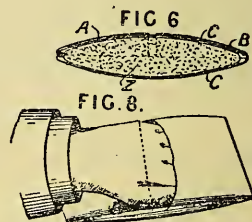
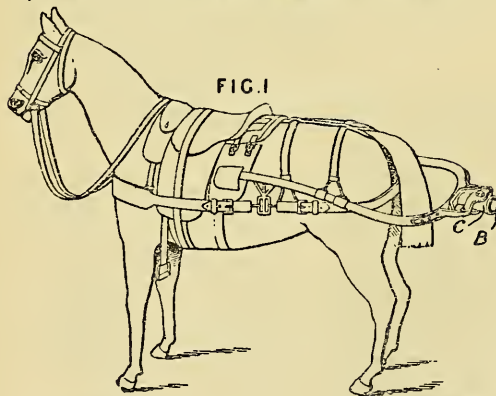
Fastening breeching. The breeching strap (shown in plan in Fig. 1) is fastened to the shaft by buckling the strap a round a link d pivotally connected to the plate c, which is screwed or otherwise secured to the shaft b. Vertical play of the link is prevented by the shoulders d', Fig. 6, which are formed at each end of the pivot d'.



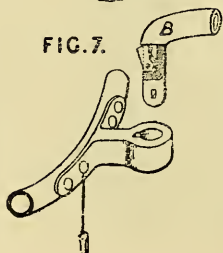
pivoted socket c, either by spring pawls or a key, and in line with the shafts by a bolt projecting from the arm B. Fig. 7 shows another arrangement in which the arm is bent downwards and fits into a fixed socket.

11,311. Scott, D. May 23.

Grooming pads are formed of cotton-velvet or other suitable fabric in the form shown in the Figures. Three pieces of fabric A, B, C are employed, of which B forms the back of the bag into which the stuffed pad Z is slipped, A forms an open pocket for the hand at one end, while the turned over end of the piece C constitutes a second pocket. This second pocket can be turned over after the manner of a tobacco pouch when the internal padding is to be removed. An open band may cover the openings of the pockets, and the piece B may be dispensed with, the pad being formed of one long strip of fabric.

**11,049. Dundonald, Earl of.** May 21.

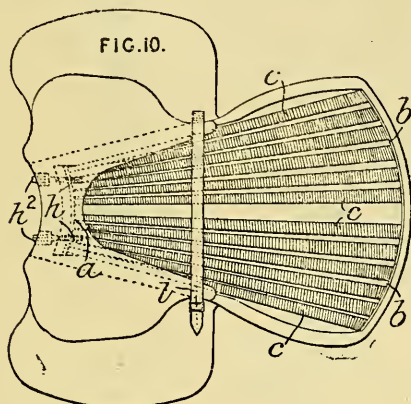
Harnessing, systems of.—The shafts are carried by the horse and are attached to the vehicle by a readily separable connection. In the arrangement shown in Fig. 1, the arm B is kept in place in the

**11,324. Rees, J. P.** May 23.

Saddles.—Relates to a method of constructing a saddle with a flexible or elastic seat. For horse and like saddles, Fig. 10, spiral springs c are stretched between the cantle bar b of an iron frame and a short bar a at the pommel of the saddle. This bar a is pulled forward by two screws h, h turned by a key fitted on the square head h. A strap l presses the springs down at the middle of the seat. The springs may be covered with leather.

(For Drawing see next page.)

11,324.

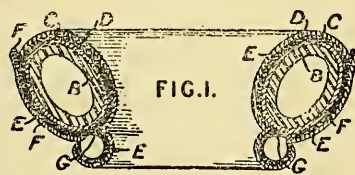


11,334. Coupland, W. J. May 23.

Collars, neck.—The collar consists of a frame F, G of vulcanized fibre and an inflated rubber bag B enclosed in a flannel casing C and protected at the back by a covering of hose cotton duck D, the whole being enclosed in leather E. The part G may be of ashwood.

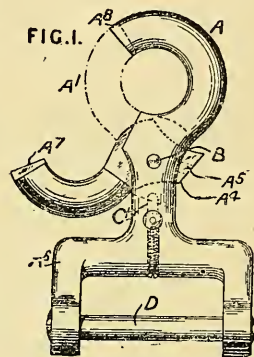
(For Drawing see next column.)

11,334.



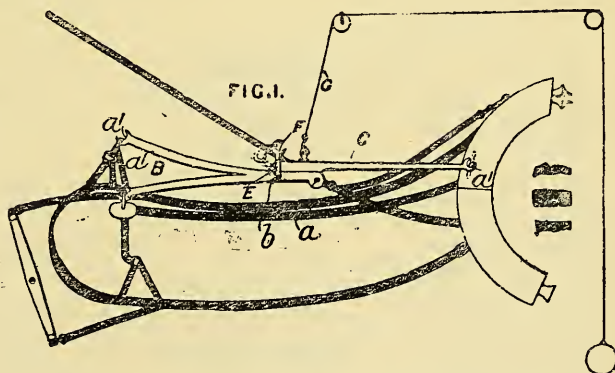
11,467. Hitchcock, J. P. May 26.

Fastening.—Relates to snap or slip hooks for crane and other lifting and hauling gear, harness traces, &c. The Figure shows a trace hook, the trace being attached to the bar D. The tongue A¹ is pivoted at B and is kept closed by a spring catch C¹ concealed within the part A⁵ and engaging with a socket A⁵ in the bevelled end A⁴. There may be a tongue A⁷ to enter the slot A⁸. The part A may extend beyond the centre line as shown or otherwise



11,663. Mackenzie, J. W., [Gleason & Bailey Manufacturing Co.]. May 28.

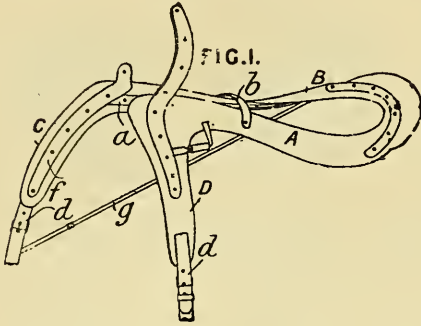
Brackets and stands for.—A hanger for harness, for use in fire stations and like places, comprises two bars B, C pivoted together at a and kept in a horizontal line by a fork E pivoted to the lower bar at b and just slipping over the end of the upper bar. The harness is suspended on the hooks a¹, the bar B being forked with one arm longer than the other to hold one side high enough for the horse to walk under. The whole device is supported by a cord G and counterpoise, the cord passing overhead pulleys. The fork E has an extension F connected to the driving rein, and by slightly pulling the latter the bars B, C fall into a vertical position, release the harness, and are drawn up out of the way by the action of the counterpoise. The fork E is provided with an antifriction roller in the crutch. The apparatus may be used to hold the harness whilst being cleaned.



12,226. Egholm, C. June 4.

Saddles.—Relates to the trees and girths of ladies' saddles. The parts A, B, which are of wood as usual, are made very light so as to be flexible, the required strength being afforded by steel strips a, preferably inserted flush with the wood. They are continued downwards at C, D, and these parts also are strengthened with strips f. The sides A, B are connected by a spring b. The girth-strap d

is attached at its ends to the projections C, D. It is kept in position by the strap *g*.

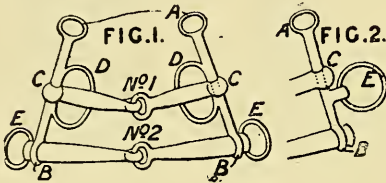


12,407. Bradley, G. F.
June 6.

Collars, neck.—More leather than usual, with several extra rows of stitching, is arranged between the fore wale and body of the collar, as shown, to give more room for the hames.



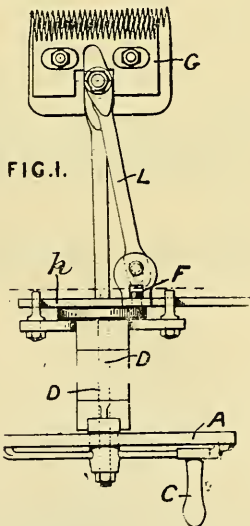
12,355. Mansuy, C. F. June 5. [Date claimed under SEC. 103 of PATENTS &c. ACT, 1883, December 9th, 1895.]



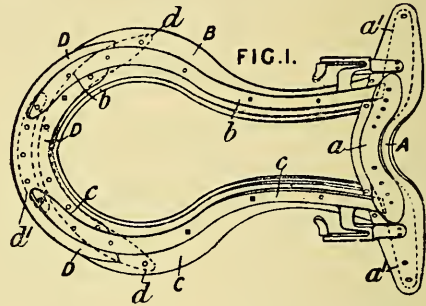
Bits.—The bit has two hinged mouth-bars, as shown, which may be secured to the cheeks A, B in any suitable way. There may be two rein rings D, E or only one E, Fig. 2. The part A, C may be dispensed with.

12,397. Hillhouse, D.
June 6.

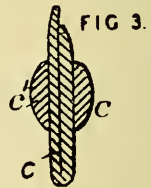
Horse-clippers and the like.—The lever L working the cutter G is actuated by the reciprocating bar *h* worked by the crank-pin F carried by the spindle D of a spur wheel which gears with internal teeth on the large wheel A provided with the handle C.



13,381. Camille, A. A. June 17.



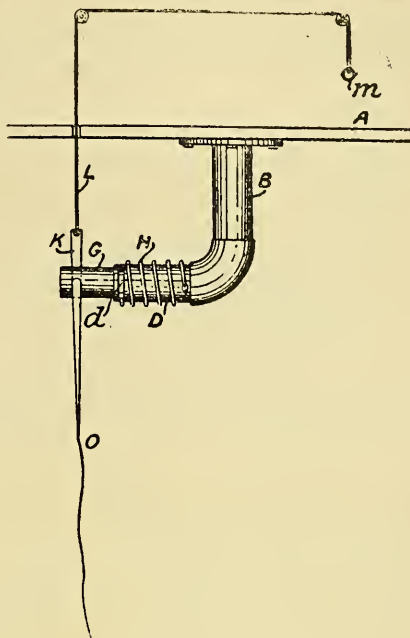
Saddles.—Relates to the trees of racing saddles. In the form shown in plan by Fig. 1 and in section by Fig. 3, the tree is formed of a single piece of doubled leather A, B, C strengthened at the cantle by a double piece of leather D riveted thereto, the whole being strengthened at the top by metal stays *a*, *b*, and *c*, by stays *a'*, *c'* below these, together with the stays *d*, *d'*. There is a stay (not shown) at the rear of the stay *a'*. The stays *c'* on each side slide freely beneath the stays *a'* and *d*. The stay *d'* may be above the tree or be replaced by a continuation of the bars *b*, *c*. The metal used is nickel steel. In a modification, the bow is made of metal and is bent over the lengthened stay *a*, the stay *d'* is dispensed with, and the lower stay *a'* is replaced by two loops for the ends of the bars *c'*; the side bars B, C and stays *b*, *c*, *c'* are riveted to the metal bow.



13,513. Hall, H. P. June 18.

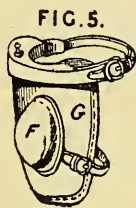
Whips.—Relates to a device for whipping horses in stables to urge them to leave in case of fire &c.

A whip O is attached to the arm K connected to a cord L passing through the ceiling A and over pulleys to a ring handle m. The arm K is fixed to a rod G turning in the tubular part D of the hanger B. A spring H is fixed at one end to the tube D and at the other to a pin fixed to the rod G and working in the slot d in the tube.

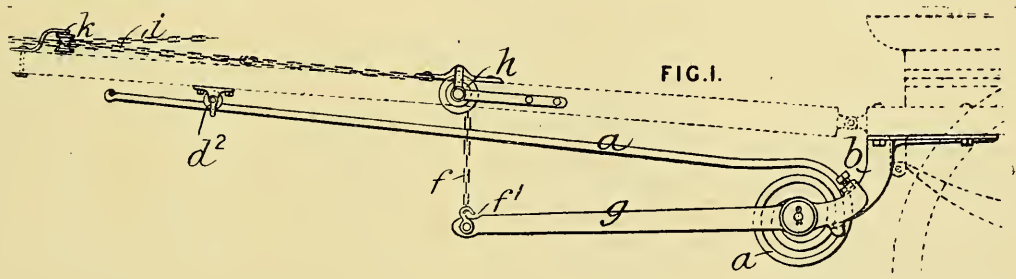


13,634. Bowman, J. June 20.

Collars, neck; saddles; knee-caps; lining and padding.—Collars, riding and harness saddles, knee-caps, &c. are padded with rubber air pads held in place by a lining of leather, cloth &c. Fig. 5 shows a knee cap where the part F is inflated as well as the part G. The elasticity of the padding may be made to vary in different parts by extra stitching or stiffening.



13,678. Brigg, T. H. June 20.

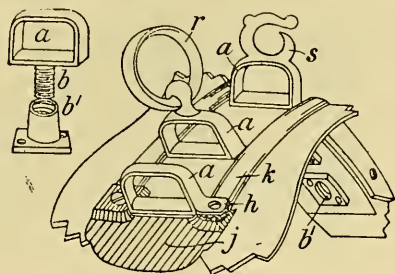


Harnessing, systems of; fastening.—A device for connecting draught animals to vehicles having shafts pivotally connected to the front part of a fore carriage, through which device an operating lifting force and also a counter-operating force, brought into action by the draught of the animal, operate directly on the shafts. The shaft lifting springs a are supported by brackets b secured to the underside of the fore carriage, and are attached thereto in such a way that their lifting force can be conveniently adjusted. These springs apply their lifting thrust to the underside of the grooved rollers d². The rear end of each trace f is connected to a hook f' on a lever g, which is attached to the same bracket b as the spring. The trace passes thence over a deflecting pulley h connected to the shaft, and is attached to the collar of the animal. When the device is arranged to throw part of the load on the animal when backing, a connection i passes from the breeching over a roller k to the trace f.

13,711. Stanley, H. A. June 22.

Saddles, harness. The back-band is guided in loops a attached to the saddle by a central screw b screwing into a socket b' or vice versa. There may also be antifriction rollers and lugs h for screws.

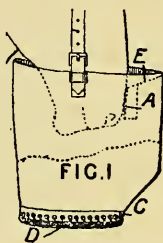
The terret rings *r*, bearing-rein hook *s*, and crupper loop may be cast in one with the loops or be suitably attached thereto. The lugs *h* may be covered



by parts of the plate *j*, ornamental or otherwise, which also serve to secure the ends of the beading *k*.

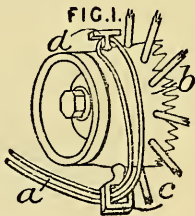
14,004. Dundonald, Earl of. June 24.

Nose bags.—The bag is of stout canvas so that it may be used to contain water, and is strengthened at the bottom by a canvas strip *C* with eyelets for a meshwork of cords *D*. A cross strap *A* keeps the horse's nose in a position for breathing freely. The space between the strap *A* and the bag may be closed by a pervious fabric *E*, preventing the food from being tossed out.

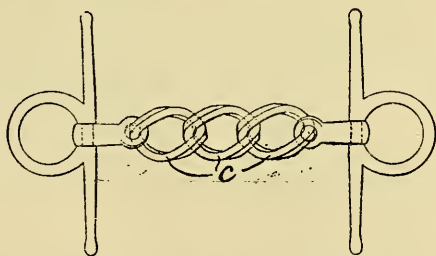


14,903. Boyce, J. July 6.

Fastening reins. The object is to fasten the reins so that a horse and cart may be left unattended. The reins *a* are fastened to the wheel hub or spokes by an eye *e* and hook *d*. The hook and eye may be carried by a strap buckled round the hub.



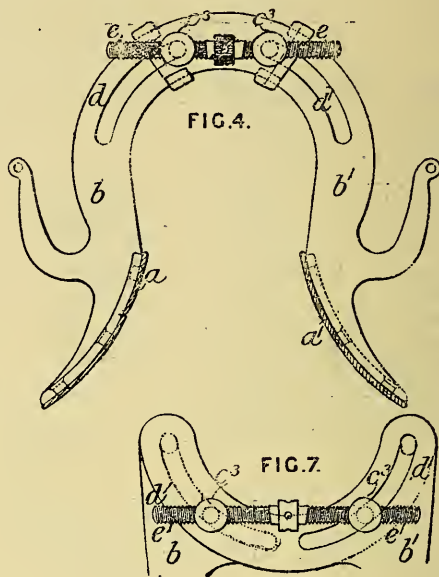
15,392. Andersson, J. July 11.



Bits.—The mouth bar is formed of a chain, the links *c* of which are comparatively wide and are

formed of square or otherwise edged wire or rod. The links are twisted so that they lie flat in the mouth.

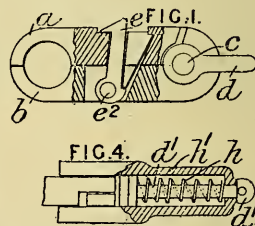
15,769. Larsson, C. A. July 16.



Saddles.—Relates to saddle-trees more particularly for pack saddles, the object being to adjust the tree to fit different animals. The side bars *a*, *a'* are connected at each end by an arch consisting of two plates *b*, *b'*, which can be slid upon one another by a right and left handed screw *e* engaging with bolts *c*, which are fixed to one plate and pass through a slot *d* or *d'* in the other. Fig. 7 shows a form suitable for supporting a gun. The Provisional Specification states that the arms *b*, *b'* may slide telescopically, or that one of the arms may be forked to receive the other, and also that they may have interlocking teeth.

15,812. Hill, R. July 17.

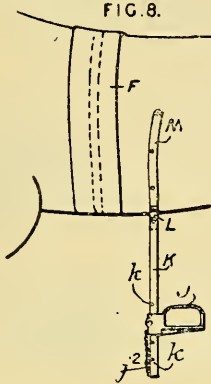
Fastening.—Traces, pole chains, &c. are fastened to the vehicle by a slip hook or coupling link, Fig. 1, which consists of two parts *a*, *b* hinged together at *c* and held together by a spring catch *e* pivoted at *e'*. A shackle *d* is fixed to the pivot *c*. The hook is released by pushing back the catch *e*. The spring



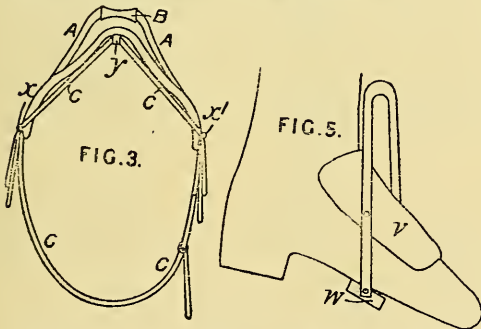
attachment, Fig. 4, may be used with this hook or link. It consists of an eye bolt d^1 , d^1 , which compresses a spring h in the barrel h^1 .

16,333. Cawdery, J. W. July 23.

Stirrups.—The horses for railways for recreation, of the kind described in Specification No. 2908, A.D. 1894, are formed in two parts hinged together, the space between the two parts being hidden by a plate F. To prevent the riders getting hurt, each stirrup is formed so that it is not possible to turn the supporting rod under the body of the horse, although it can freely turn in any other direction. This is accomplished by the stirrup J being connected to a rod K pivoted to a hinged plate L carried by a plate M. The stirrup is adjustably connected to the rod by a pin j^2 and grooves k .



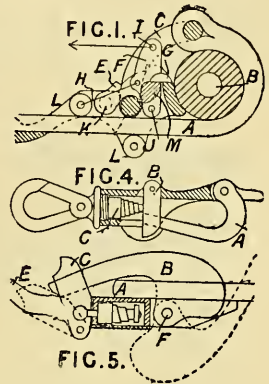
16,658. Surman, J. G. July 28.



Saddles; stirrups.—Handles A, A, or a chain, strap, &c. are fixed to the saddle to assist the rider. A roller B, which turns on these handles or is otherwise secured, serves to increase the leverage of the reins when passed beneath them. An extra girth C attached to the fore part of the saddle prevents the saddle from shifting as the rider mounts, grasping this girth, and affords safety if the ordinary girth breaks. The girth C passes through loop y and between rollers x , x^1 and other rollers (not shown) beneath them. The stirrup has a pivoted tread w and a pivoted support v for the top of the foot. The Provisional Specification states that the foot support may be carried by the pivoted tread.

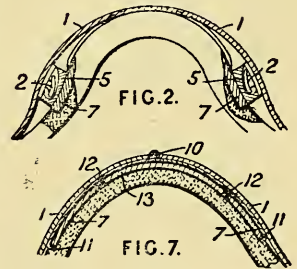
16,669. Weston, B. S., and Wilton, H. S. July 28.

Fastening traces and pole chains. The form shown in Fig. 1 is for the traces of double harness. The trace A passes freely through the frame L, L round the roller bolt B and terminates in a link C, which is fastened to the frame L, L by a U-shaped piece E pivoted at K and carrying a piece F pivoted at J. A volute spring at H presses the piece F outwards, so that the cross-bar M snaps beneath the part G of the frame L, L. The trace link C is released by pulling on the piece F at I. The form shown in Fig. 5 is for the traces of single harness. The loop E is hooked on to the vehicle, and the trace A is connected to it by the hook B pivoted at F. The point of the hook is held by catch C pivoted at G and drawn forwards by the volute spring. Fig. 4 shows a slip hook for a pole chain. The point of the hook A is held by a pivoted catch B controlled by the spring C.



17,452. Roller, G. C. Aug. 7.

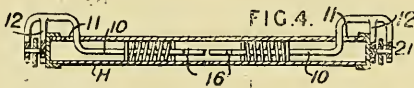
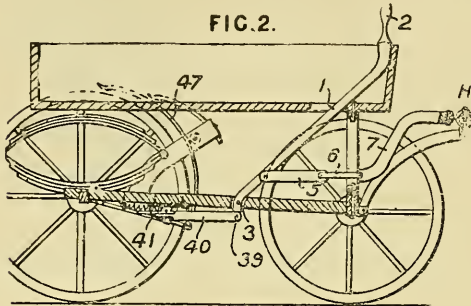
Stirrup straps, suspending.—The stirrups are connected by a strap 1, which passes over the saddle and fits in a groove therein. The strap 1 is detachably connected to the side bars of the saddle by studs 2, Fig. 2, fixed to the strap and fitting into sockets 5 fixed to the side bars 7, or by a plate 13, Fig. 7, the ends 11 of which catch beneath the side bars 7. The strap 1 is riveted to the plate 13, which is hinged at 10. Studs 12 on the strap fit sockets in the plate 13.



17,583. Lechner, J. Aug. 8.

Runaway horses, releasing; fastening traces. The lever 1, pivoted at 3 to the framing, is used first to release the horse and then to apply the brakes or vice versa. An arm 5 connected by a link 6 to an arm 7 pivoted to the lever 1 is used to control a spring catch fitted to the whippletrees H, which are hollow, as shown in Fig. 4, and contain rods 10 with right-angled bends 11 passing through slots,

and are normally held in position by springs so that the forked ends 12 engage the traces 21. Notches 16 are formed in the rods 10, which are engaged by projections of the spring catch mentioned above, but not shown. The lever 1 is also



pivoted at 39 to a bar 40, which is connected to a spring-controlled bell crank 41. At one end of the brake 47 there is an eye 53, Fig. 13, connected to the bent end 54 of a rod 55 normally held within the socket 56 by a spring 57 and kept there by a spring catch. By pulling the handle 2 forward, the springs force out the forked ends 12 and release the traces, and the horse draws the holdback sleeves from their supporting pins. Immediately afterwards, the spring catch 60 is released through the action of the levers 1, 40, 41, and 80, and the brake is applied. The apparatus may be modified for a vehicle carrying a pole and drawn by two horses.

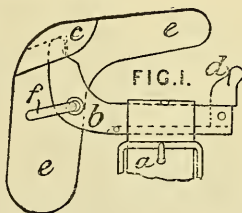
17,761. Osment, T. Aug. 11.

Stirrup straps, suspending.—The pivoted spring latch *b* has the angular form shown, the horizontal arm *c* serving to ensure the removal of the stirrup leather.



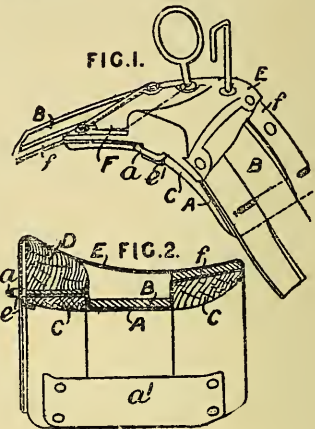
17,935. Allsopp, E. Aug. 13.

Stirrup straps, suspending.—The stirrup strap *a* is suspended from the bar *b* attached by an eye *f* to the plate *e* fixed to the saddle-tree. One end of the bar *b* rests normally in the socket *c* and the other carries



a spring catch *d*. The stirrup strap is released, if the rider is thrown, by the bar *b* leaving its socket *c* and the catch *d* turning down. The eye *f* and socket *c* are made in one piece with the plate *e*.

17,994. Sewell, F. G. G., and Sewell, H. J. Aug. 13.

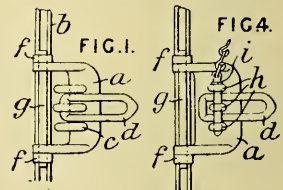


Saddles.—The harness saddle consists of a sheet brass or other metal piece *A* channelled for the backband *B* and levelled up by pieces of wood *C*, *C*, leather pieces *a'*, to bear on the animal, being secured beneath the part *A*, while above it are the leather flaps *f*, the pieces of leather *F*, the block of wood *D*, and lastly, over all, the sheet metal piece *E*. The parts are held together by the tongue *e'* passing through the crupper loop *a* and by bolts, as shown.

18,292. Sleep, W. H., and Sleep, R. H. Aug. 18]

Collars, neck; fastening traces.—

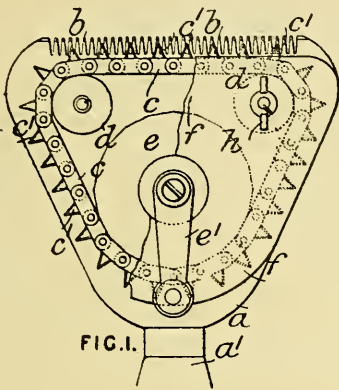
The end link *d* of the trace is adjustably attached to the hame *b* by hooks *c* or eyes *h* on a plate *a*, which may be hinged by a pin *g* to lugs *f* riveted &c. to the channelled or other shaped hame. A draw-bolt *i* passes through the eyes *h*.



18,467. Jenkins, C. D. Aug. 20.

Horse clippers and the like.—The cutting blades *c'* of clippers for horses, sheep, &c. are mounted upon an endless chain *c*, which passes over guide rollers *d* and a gear wheel *e* provided with a handle *e'* or

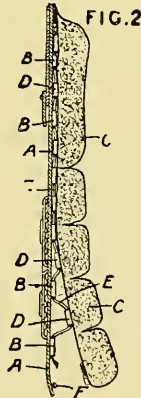
connected to an electric or other motor. The comb *b* is formed on a plate *a* connected to the handle *a'*. The cutters and comb are pressed



together by winged nuts *h* bearing against the cover plate *f*.

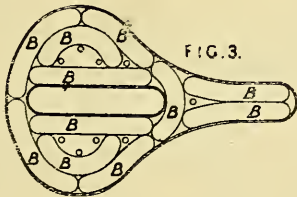
18,728. Newburgh - Stewart, H. R. Aug. 24.

Saddles.—Detachable pads *C* are attached to the flaps *A* or panels of pack and other saddles by a strap *E*, which is passed through loops *B*, *D* on the flap and pad respectively, and is fastened by a stud *F*. The loops alternate, as shown.



18,798. Jones, T. R. Aug. 25.

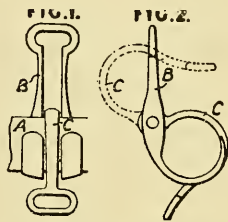
Saddles for bicycles or any other purpose are formed by compressing spongy india-rubber by suitable means and enclosing the same within a covering or casing *B* of india-rubber, leather, canvas, or other suitable material. These are inserted in



suitable pockets formed in the saddle cover, which may be supported by suitable springs or supports.

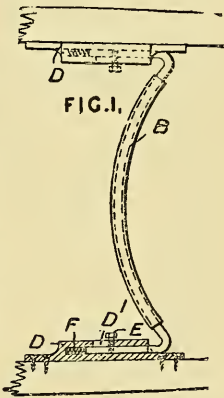
18,827. Chapin, W. R., Lindsay, A. L., Howarth, J. W., and Robertson, J. M. Aug. 25.

Tugs, shafts; fastening.—The thill *A* is passed through the double hook *B*, to which is hinged the curved lever *C* capable of occupying both the full-line position embracing the thill and the dotted line position for releasing it. The hook *B* is looped at the top to receive the back-band, and the lower end of the hook *C* is looped to form a belly-band fastening.

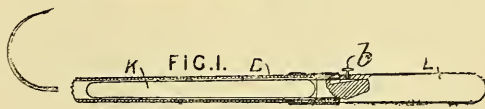


19,055. Gonne, C. M. Aug. 28.

Breeching.—Consists in attaching harness breeching to the vehicle instead of to the horse. The breeching *B* consists of a bar of metal covered with leather, rubber, or the like to prevent chafing. Its ends are bent back so as to enter sockets *D* screwed to the shafts. A small amount of motion is allowed in the sockets, which is limited by pins *E* working in slots *D'*, and shocks are lessened by springs *F*. The bar *B* is bent either upwards or downwards from the sockets, to suit the particular vehicle to which it is attached, so that it shall bear at the right height against the ham of the horse. For pair-horse vehicles, the bar is formed with a pair of curves, one for each horse.



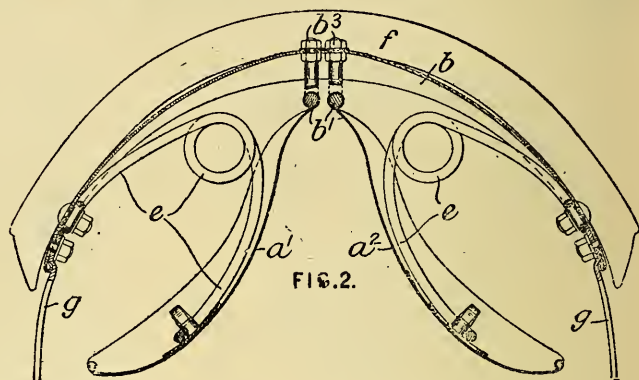
19,116. Stokes, H. Aug. 29.



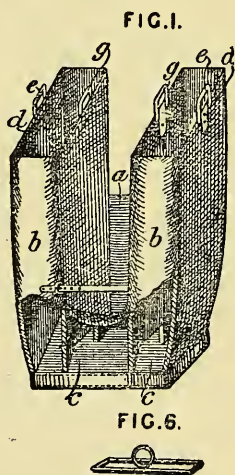
Whips; scrapers, horse and like.—To the handle *L* of the whip is fixed a flat blade or scraper *K*, which, when not in use, is inserted in the hollow part *B* of the whip stock and secured by a catch *C* or screw.

19,378. Taunton, R. H., and Holloway, G. Sept. 2.

Saddles.—Cart, pack, riding, and other saddles are made with a resilient sheet metal framework. The Figure shows a section of a cart saddle. The dished metal plates a^1, a^2 , faced, if desired, with asbestos or celluloid for coolness and smoothness, are supported by parallel bars b^1 , the ends of which are bent up and secured to the outer shell or plate b by nuts b^3 . The plates a^1, a^2 , or the sides of an equivalent single plate, are each pressed inwards by springs e connected to the plates a^1, a^2 and to the plate b . Rubber blocks, pneumatic cushions, &c. may be used in place of the spring e . The plates are beaded or corrugated &c. at the edges. The back chain passes along the trough f , and the bellyband g is connected as shown.

**19,836. Thorpe, C. J. Sept. 8.**

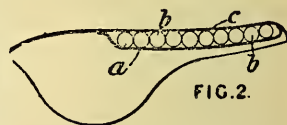
Nosebags.—Bags in which there is a shallow compartment a from which the animal feeds and one or more compartments b which serve as hoppers and from which the food passes through openings c are provided with metal strips d to maintain the form of the bag. The head strap is attached to the rings e and runs through the rings g so as to close the compartments b when the bag is in use. The rings e, g and strips d may be combined, as shown in Fig. 6.

**20,667. Forrester, C. C. Sept. 18.**

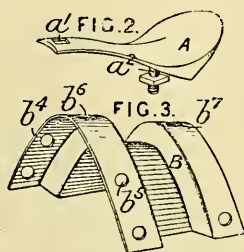
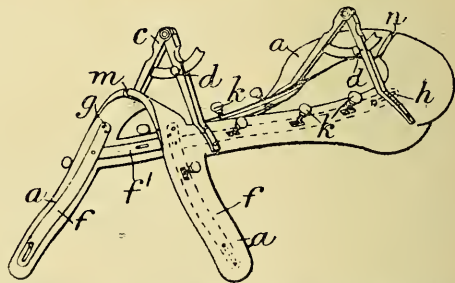
Clothing for animals; saddle cloths.—Articles of clothing and saddle cloths for racing or trotting horses or racing dogs are made in the various colours and patterns adopted by sporting clubs &c. in order to afford easier identification. The device may be produced by weaving, knitting, dyeing, &c. or by sewing or gluing on the desired patterns.

20,699. Simmonds, T. H. Sept. 18.

Saddles.—A series of balls b are arranged on a support a beneath the cover c of saddles or seats to give greater resiliency. The Figure shows in section a saddle such as is used for velocipedes.

**20,373. Nicklin, S. Sept. 15**

Saddles, harness. The lower part B is of stamped sheet metal of flanged trough section. The upper part A is of wood or metal of suitable form and is fixed to the part B by a nut and a bolt a^1 passing through the hole b^1 and by the bearing rein hook which passes through holes a^1 and b^6 . The holes b^4, b^5 are for the terrets, and the other holes are for attaching the leather covering.

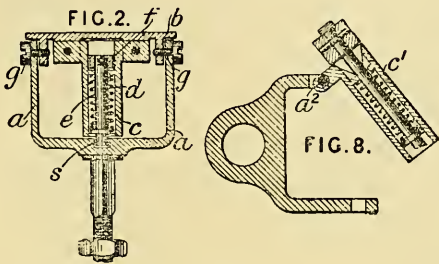
**21,685. Richards, J. W. Sept. 30.**

Measuring for saddles.—The apparatus consists of a frame a in two parts divided at m, n and connected by hinged rods c which may be fixed at any

angle by the clamping screws *d, d*. Spring strips *f, f*¹ fixed at one end *g* and free at the other end *h* are adapted to be pressed against the animal by screws *k, k*.

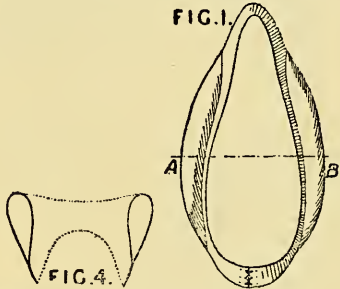
21,867. **Schwarzenberger, S.** Oct. 2.

Fastening.—The fastenings are for connecting traces, pole chains, &c. to the vehicle or horse collar. Fallen horses may be rapidly released by these slip fastenings. The form Fig. 2 is for bolting to the splinter bar. The trace passes over the tube *c* riveted to the disc *b* which is pivoted at *g, g* to the fixed arms *a, a*. The tube is held fast by a pin *d* within it. A spring *e* forces this pin into the socket *s* from which it may be released by turning a lever *f* which is fixed to the pin and runs on the inclined edge of the tube, as shown in the form Fig. 8, for attachment to horse-collars, vehicle poles, &c. In this form the tube *c*¹ is hinged to an eye at *a*².



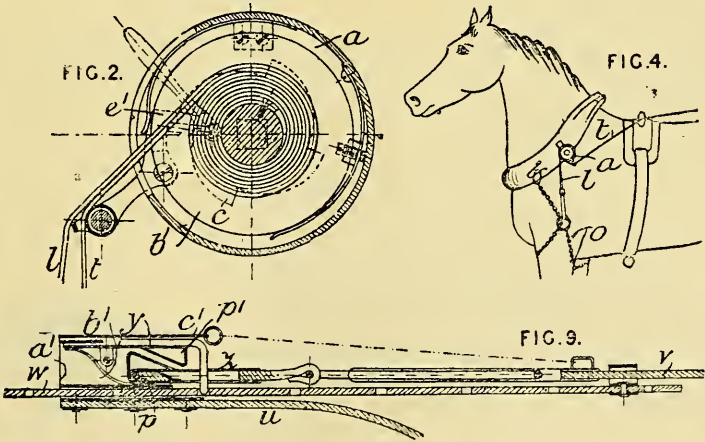
22,056. **Clements, T.** Oct. 5.

Pads for neck collars.—The pad for use beneath the ordinary collar consists of two bags of india-rubber-coated canvas &c. partially filled with air or water. The pad may be lined or entirely covered with some soft material. Fig. 1 shows an elevation of the collar pad, and Fig. 4 a section on A, B.



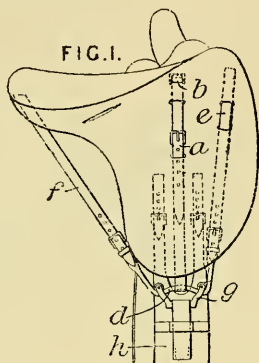
22,071. **Leiterer, N.** Oct. 5.

Stopping runaway horses, means for.—A saddle or draft horse is stopped by allowing two connected chains *o* or cords to fall down over the legs. In the form, Fig. 4, the strap *l* supporting the chains is wound on the drum *b*¹, Fig. 2, in a casing *a*, and is released by pulling the rein *t*, lifting the pawl *e*¹ from the ratchet wheel *c*, and freeing the drum. Fig. 9 shows a section of a fastening for supporting the chains in the case of a saddle horse. The chains are attached to a strap *w* which is released from the box *a*¹ by pulling the strap *v* which first withdraws the slide *c*¹ from above the catch *y* pivoted at *b*¹, and then pulls forward the slide *z* carrying the incline *p* so that it acts against the incline *p*¹ and so lifts the catch from engagement with the strap *w*. The case *a*¹ is supported by a strap *u*. With slight modification the devices, Figs. 2 and 9 may be used for saddle horses and draught horses respectively.

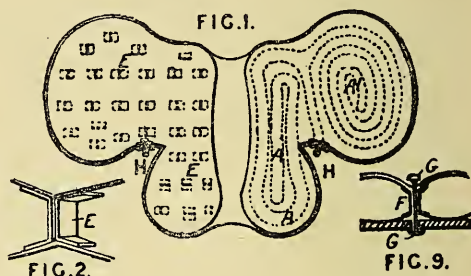


22,147. Richards, J. W. Oct. 6.

Stirrup straps, suspending, in ladies' saddles. The stirrup strap *a* passes over rollers *b* in a groove beneath the seat to the off-side where it is attached to the piped strap *d* forming part of, or connecting the straps *e*, *f*, arranged as shown. The strap *d* is attached to the girth *h* by a forked piece *g* carrying rollers.



road and railway vehicles, &c., instead of being stuffed with hair &c. are inflated, and the surfaces are kept in the form required by stays *E* extending between the walls of the inflated chamber, or

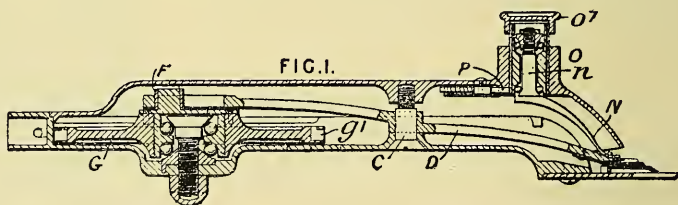
**22,363. McDonald, A. R.** Oct. 9.

Lining and padding; collars, neck; saddles.—Saddles, horse-collars, mattresses, cushions for

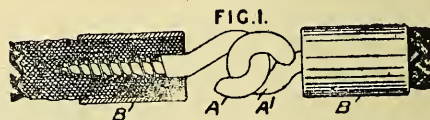
by the use of straight, curved, or intersecting partitions, or inflated tubes *A*, *A*¹. Suitable valves are provided as at *H*. The stays may be formed as tubes *F* to allow for ventilation, and to enable a covering material to be drawn in with buttons *G*.

22,612. Coles, G., and McLean, W. Oct. 12.

Clippers for sheep. The machine is worked by compressed air &c. acting on the wheel *G* with approximately radial vanes *g*¹, the air &c. escaping at the cutters. The hub of the wheel carries an eccentric pin with a loose sleeve *F* working in the slotted end of the lever *D* pivoted at *C*. The friction of the wheel on its pivot is reduced by ball bearings, as shown. The tension of the cutters is adjusted by a hollow screwed stud *O* with a milled cap *o*⁷. The stud is connected by ball bearing to the stem *n* of the lever *N* connected by a pin to the lever *D*. A spring bolt *P* locks the stud by engaging with grooves in it.

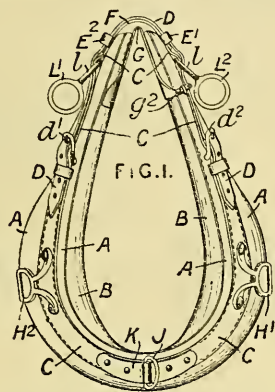
**22,724. Norfolk, H. G.** Oct. 13.

Fastening traces and other parts of rope harness. Fig. 1 shows a method of coupling ropes which may be applied to the above purposes. The ropes are enclosed in metal sleeves *B*, *B* which may be roughened to afford a better grip. Gimlet-pointed screws attached to hooks or eyes are then screwed into the ropes.

**23,459. Blyth, W. E.** Oct. 22.

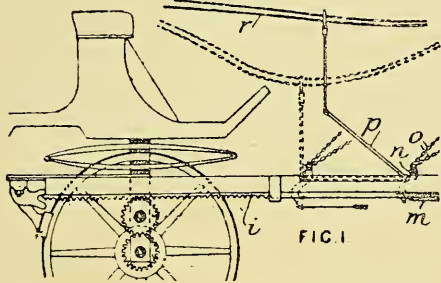
Collars, neck.—The collar has a leather body *A* padded at *B*. No hames are used; they are replaced by a strap *C* sewn &c. to the body *A* and passing all round the collar except the top, which is bridged by a strap *D* passing through loops *E*¹, *E*² and buckled at *d*¹, *d*². Beneath the strap *D* is the pad *F* and the leather flap *G* buckled at *g*². The rein rings *L*¹, *L*² are held by the strap *D* passing through loops *l*, and the hame tugs *H*¹, *H*² are riveted &c. to the strap *C* and body *A*. A dee *J*

for use in double harness is fixed by a strap K
For Cape harness the neck bar strap passes round



the top of the collar and through the loops E¹, E² and l, l.

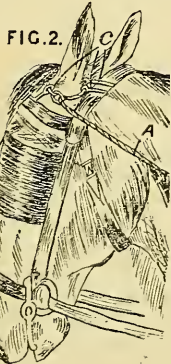
23,489. Creutzfeldt, G. F. H. Oct. 22.



Stopping runaway horses, means for.—The horse is stopped by the action of an extra pair of reins o and by the application of a brake. These are brought into action by slackening the ordinary reins r, which allows the ring n to be forced over the hinged rod p by the spring m. To the ring n are attached the reins o and a rack i operating the brake.

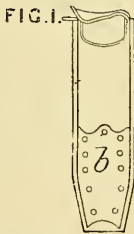
23,810. Stewart, E. J. Oct. 26.

Bridles, attachments for. A vicious or other horse is controlled by a cord A, which runs through loops c, and forms a nooze round the base of one or both ears.



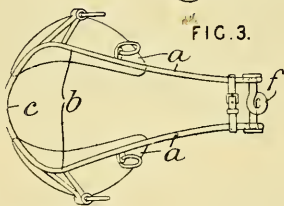
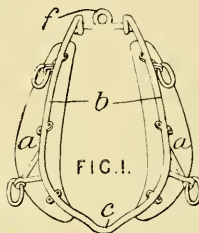
24,002. Ash, W., and Swift, I. Oct. 28.

Saddles.—Harness saddles are protected from the wear of the shafts, traces, and tugs by a plate b of metal, leather, &c. riveted or sewn &c. to the flaps.



24,222. Hainsworth, J. S., and Whittingham, T. R. Oct. 30.

Collars, neck.—The collar consists of two pads a secured to a bar or tube b, which is bent at c to avoid the neck, and is continued back and provided with an eye f, as shown, for attachment to the saddle. Two bars or tubes jointed at c may be used instead of one. For pair horse harness, straps connect the pads a with the saddle. The Provisional Specification states that stays may be used between the bar b and pads a.



24,830. Cooper, S. A. Nov. 6. *Drawings to Specification.*

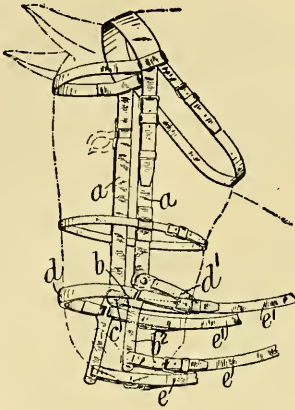
Saddles, riding. A piece forming the combined seat and skirts, embossed or otherwise, is made by pressing softened leather or a single skin of leather between suitable dies. The flap with the knee and thigh pads is similarly formed

25,066. Wethered, E. R. Nov. 9.

Bridles.—The bridle is fitted with attachments by which the horse may be controlled without bit or curb. The reins e, e' are attached to bell-crank levers b, b² pivoted at c to the stiffened cheek straps a. The nose band is in two parts d, d¹ connected with the levers on opposite sides of the fulcrum, as shown, so that on pulling the reins the horse's nose is compressed. The Provisional Specification states that pulleys may be used to draw the two parts of the noseband together, and that the power may be increased by fixing one end of the reins to the collar &c.

(For Drawing see next page.)

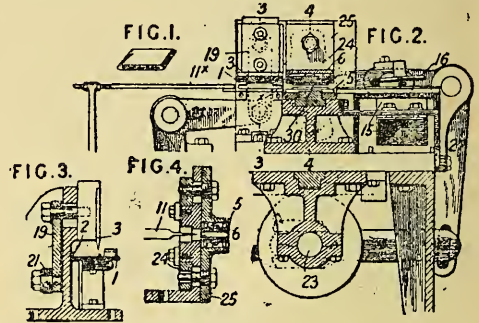
25,066.



25,175. Royston, E. R., [Spear, E., and Middleton, F. L.]. Nov. 10.

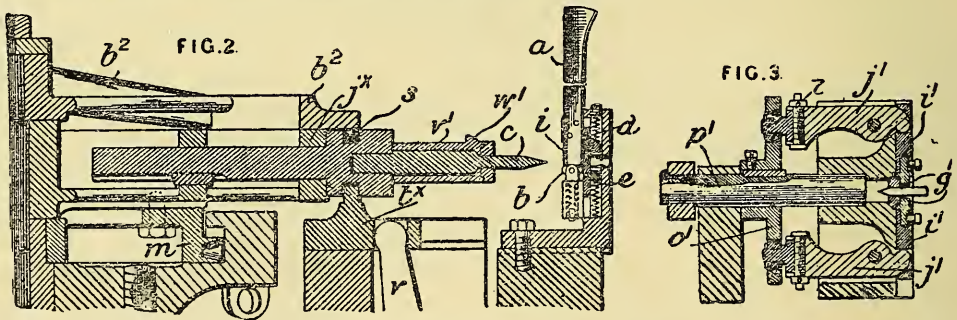
Straps and bands.—The machine is for use in making seamless leather loops, Fig. 1, for harness &c. and comprises mechanism for cutting off blanks from a strap, slitting the blanks, and feeding them to a trough, in which they may be blackened and from which they are taken to some form of finishing machine. Fig. 2 shows a sectional elevation of

the machine, and Figs. 3 and 4 are sections on the lines 3, 3 and 4, 4, of Fig. 2. A strap is fed through the guide 1 to the adjustable stop 2, and the blanks are cut off by the knife 3 actuated by



link 19 and bell-crank lever 21. The blank is pushed laterally by rod 11^x beneath grippers 5, Fig. 4, which firmly grip its edges and carry yielding grippers 6 for pressing on the face of the blank. The grippers are carried by slides 25 actuated by cam slots in the piece 24 oscillated by bell-crank lever 27. While so held horizontal knives 11, Fig. 4, carried by slides 30 slit the blanks from each edge. The loops are then pushed over an opening leading to the channel 15 into which a removable trough or drawer is placed, the loops being passed down by an oscillating presser 16. The bell-crank levers 21, 27, the rod 11^x, and the slides 30 are all moved by cams on the shaft 23.

25,176. Royston, E. R., [Spear, E., and Middleton, F. L.]. Nov. 10.



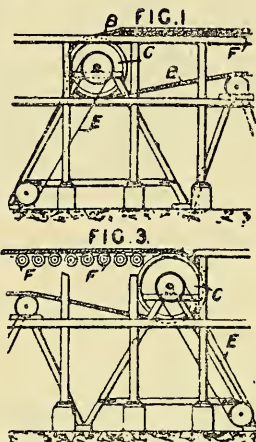
Straps.—Relates to machinery for use in making seamless leather loops for harness &c. The machine receives slit blanks and presses them to rectangular form. The slit blanks are fed down a hopper *a* and are taken out one by one by a number of pointed loop sticks *c* arranged radially in a carrier *j^x* which has a step-by-step motion imparted by a pawl and ratchet wheel *m*. A spring catch liberated by the pawl holds the loop stick *c* in exact alignment with the loop. The loop stick is moved longitudinally so as to enter a loop supported beneath on the spring plate *b*, at the sides by other plates, and at the back by the spring plates *d*, *e* beneath which the loop stick enters. The part *i* has flanges which allow the loop expanded on the loop stick to pass while the other loops are stopped. The loop stick is reciprocated by the slide *t^x* operated by lever *v*. The loop sticks are prevented from moving radially until opposite the hopper *a* or the press by a stationary wheel *b²* with a flange which enters the groove *s* and is cut away at the proper points. Fig. 3 shows one of the two presses provided in the machine. The press has four jaws *g¹* carried by slides *i¹* worked by levers *j¹* and four cam slots in the disc *o¹* on the shaft *p¹* rocked by a crank. The loop stick is reciprocated by a cam and adjustable lever. The loop is discharged by the engagement of a spring catch with the catch *w¹* of the lever *v¹* by which the sleeve is pulled outwards.

between projections b , b^1 on a plate a secured to the saddle. A hollow conical pin d is passed through b , b^1 , and c^1 , and has in its interior a pin e reduced at e^1 and held in the position shown in Fig. 6 by a spring h . The pin e holds balls l , l in a groove m in the projection b to lock the pin. By means of a line the coachman can withdraw the pin e to release the balls, and subsequently the pin d to free the horse from the vehicle.

27,472. Guitton, E. Dec. 2.

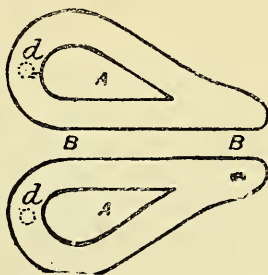
Training and breaking-in horses and other animals.—

The animal is placed on an endless travelling band or track B which is moved over rollers F in a direction opposite to the motion of the animal by drums C, operated by endless bands E. The apparatus is intended mainly for producing a racing scene on a theatrical stage.



27,644. Henson, W. J. Dec. 4.

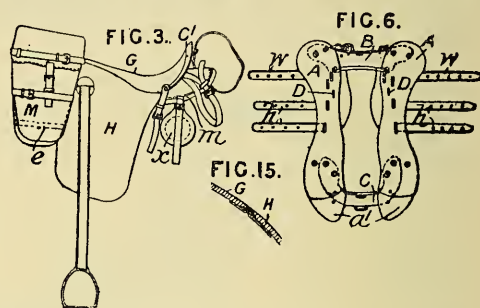
Saddles.—Relates to pads for use with cycle or other saddles, cushions, or seats, to prevent perineal pressure. The pad is formed hollow in the centre at A, and is inflated with air through a valve at d . The pads are used in pairs with a space B between them, and are secured in any suitable manner to the saddle or cushion.



27,699. Michel, P. M. Dec. 4.

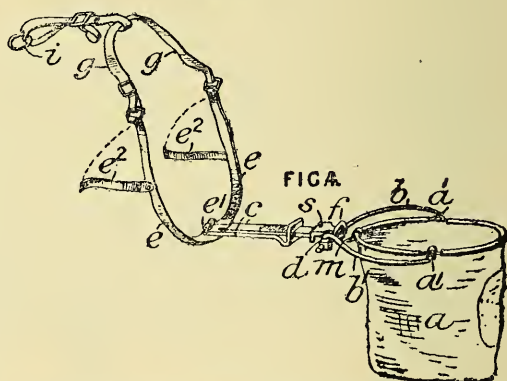
Saddles.—Relates to military saddles specially adapted for artillery service. Fig. 3 shows an elevation of the saddle, and Fig. 6 an underside view of the tree with certain other parts. The tree is made up of two pieces A of beech wood, riveted to a sheet-steel pommel B and cantle C. Slots D are made for the stirrup straps, girth straps h , and chest strap w , the straps being kept in place by thickening their inner ends. The pieces A have a canvas cover m and are covered at the ends by raw hide a^1 . The leather seat G is bolted

to the pommel and is turned over the cantle and stitched to a lining beneath, a copper edging C^1 bolted to the cantle covering the seam. The seat G is stitched to the flaps H in the manner shown



in Fig. 15. Pads x are attached to the tree and a strap passes through the pommel, the seat and the leather connecting the saddle bags M, strengthened by metal strips e .

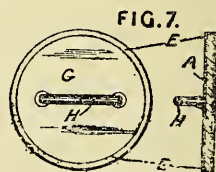
27,853. Bauch, K. Dec. 7.

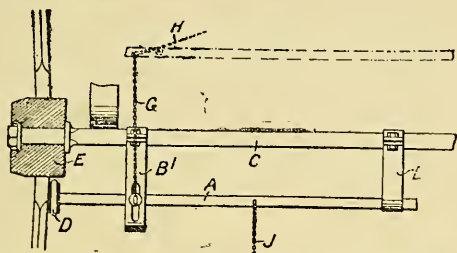


Nosebags.—The nosebag a folds together at a^1 and is hinged to the arms b , b^1 , themselves hinged at d to one of the bars c which slides on a second bar c , hinged at e^1 , to straps e , g for passing round the neck. The straps e are steadied by hinged arms e^2 bearing against the horse, and the strap g is connected by a strap and ring i to the saddle hook. A slide s fitting in the loop f , and a tongue m fitting beneath the end of the bar c , keep the nosebag rigid while in use.

28,309. Poppleton, T. Dec. 11.

Bridles and the like, rosettes for. Rosettes for bridles &c. are made by dishing a disc of brass &c. A and turning its edges E over a disc of iron G to which an attaching-loop H has been riveted.

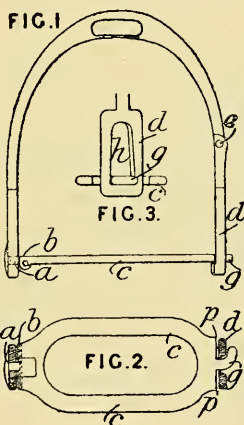


28,357. Bennett, T. Dec. 11.

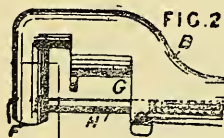
Stopping runaway horses, means for.—The bearing rein is attached to a chain J fixed to a spindle A carrying a wheel D which may be pulled into contact with the hub E of the road wheel by a chain G and lever H. The spindle A is supported by brackets B, B' from the axle C, and in turning winds up the chain J.

29,647. Cooper, W. Dec. 24.

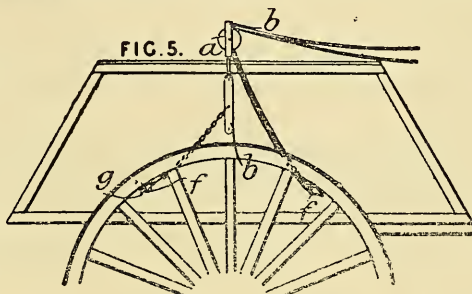
Stirrups.—The tread C of the safety-stirrup is hinged at b, and also pivoted at a to the bow, and has a hooked end g engaging with a slot h in the limb d pivoted to the bow at e. If the rider is thrown with his foot in the stirrup, the tread pivots round, the hook g, or equivalent projection, leaves the limb d, and the tread falls down and liberates the foot. Inclined projections may be formed at the points p to force the limb d outwards.

**30,033. Pilkington, J. K.** Dec. 30.

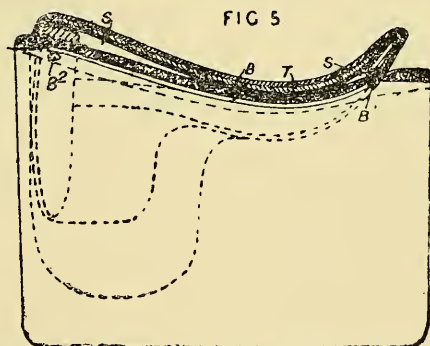
Fastening.—Each shaft or pole has a metal end B shaped as shown. The loop of the shaft-tug between the backband and the bellyband is received by the part G, and the loop of the trace is fitted over the hook F, and



both loops are secured by the spring bolt H. Fittings as described may be used when breaking-in horses.

30,110. Doggett, H. W. T., and McChesney, J. Dec. 31.

Stopping and controlling runaway and restive horses.—On stopping the vehicle, the reins are passed twice round a concave roller a mounted in the frame b, and the ends are secured by one of the spring catches f attached to the wheel rim. Should the horse become restive or tend to bolt, the motion of the wheel will produce a gradually increasing strain on the reins so as to check the animal. A chain g may also be fitted to prevent backing.

30,138. Erselius, L. Dec. 31.

Saddles; ventilation.—The saddle-cloth T is clamped in the channel S running centrally beneath the saddle by a metal bar B hinged at B' and fastened by a catch B². The bar may be replaced by a leather strap. A ventilating air channel is thus maintained between the saddle-cloth and the animal's spine.

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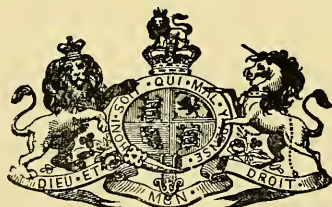
1899.

PATENTS FOR INVENTIONS.

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1903.

EXPLANATORY NOTE.

The contents of this Abridgment Class may be seen from its Subject-matter Index. For further information as to the classification of the subject-matter of inventions, reference should be made to the *Abridgment-Class and Index Key*, published at the Patent Office, 25, Southampton Buildings, Chancery Lane, W.C., price 1s., postage 6d.

It should be borne in mind that the abridgments are merely intended to serve as guides to the Specifications, which must themselves be consulted for the details of any particular invention. Printed Specifications, price 8d., may be purchased at the Patent Office, or ordered by post, no additional charge being made for postage.

SUBJECT-MATTER INDEX.

Abridgments are printed in the chronological order of the Specifications to which they refer, and this index quotes only the year and number of each Specification.

Animal clippers. *See* Horse clippers &c.

Animal muzzles. *See* Muzzles for animals.

Animals, Stocks and like appliances for holding. '97. 30,839. '98. 9884. 18,802. '99. 16,863. '00. 5202.

Backbands. *See* Harness &c.

Bags or nosebags. *See* Harness &c.

Bags, Saddle. *See* Harness &c.

Bearing-reins. *See* Harness &c.

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The names in *italics* are those of persons by whom inventions have been communicated to the applicants for Letters Patent.

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 20,045
 Anthony, J. S.'97. 2134
 Appel, G. F.'99. 13,246
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 Sir W. G.'98. 27,114
 Arnott, L. J. M.'98. 2562
 Ashton, W. M.'00. 5202
 Astley, A. E.'97. 2828

Bacon, W. W.'99. 5556
 Bailey, J.'97. 11,282
 Baines, W.'97. 1771
 Baldwin, H.'98. 17,560
 Bamford, J.'00. 9337
 Bark, H.'00. 11,064
 Barker, G.'97. 18,833
 Barnes, J. W.'98. 8879
 Barnsby, J. A.'97. 4636
 Barton, A.'99. 7181
 " A. T.'98. 9608
 Barton Bros.'98. 9608
 Barton, W. W.'98. 9608. '99.
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 Bartrum, J. A.'97. 3329
 " W. H.'97. 3329
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 Beaty Bros.'97. 17,875
 Beaty, D.'97. 17,875
 " R.'97. 17,875
 " W.'97. 17,875
 Becker, E.'98. 27,385
 Bedell, H. G.'98. 13,368
 Bednall, J. T.'00. 20,935

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 " J.'97. 10,068
 Behrens, N.'98. 24,512
 Beilby, W.'97. 24,098
 Bennett, S.'99. 3703
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 Bernard, P. L.'00. 10,151
 Berrurier, V. P.'98. 24,900
 Berthold, O.'97. 10,373
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 Bielefeld, J. M.'98. 18,593
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 Brudenell-Bruce, Lord F.'99.
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 Brundage, E. L.'98. 5000
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 Burcher, W. H.'99. 16,291
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 " T. U.'98. 9363
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 " S. A.'98. 1242
 " J.'97. 7198
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 " J.....'97. 19,258
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 Withers, S.'97. 29,086
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 Yorstoun, C. Carthew- '98.
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 Young, J.'99. 20,381

ERRATA.

Page 15. In abridgment No. **18,324** after " Aug. 6 " add *Right to Patent relinquished.*

„ 56. In abridgment No. **27,432** for "*Fastening spurs*" read "*Spurs, fastening.*"

In the volume of this Class for the period A.D. 1877-83 :—

Page iv. Under collars, neck add '77. 4289 and delete "linings and padding. See lining &c. below."

Under fastening—delete girths '77. 393. 970 and insert saddle girths '77. 393. 970.

„ v. Under saddles add '77. 4289 and delete "linings. See linings above."

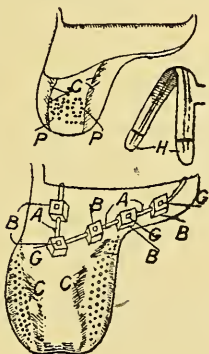
HARNESS AND SADDLERY.

Patents have been granted in all cases, unless otherwise stated. Drawings accompany the Specification where the abridgment is illustrated and also where the words *Drawings to Specification* follow the date.

A.D. 1897.

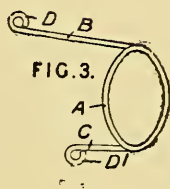
167. Orpwood, W.
L. Jan. 4.

Saddles; ventilation.—The panel is ventilated so as to keep it dry by tubes A in the interior of the panel connecting chambers B with air holes G. Perforated pads C support both sides of the rider's leg and a perforated buckle guard P occupies a position between the pads. The point H of the saddle-tree is hinged as shown.



234. Wright, J. Jan. 5.

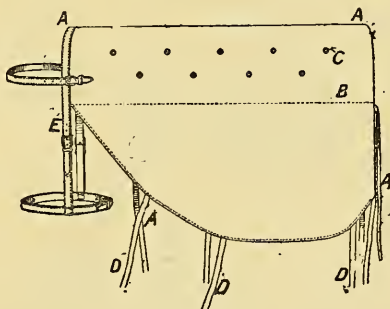
Muzzles for animals.—A muzzle for ferrets is made of a wire or metal strip shaped to form a ring A for the animal's nose and two bars B, C terminating in loops D, D' for a cord or strap round the neck.



295. Evans, H. C. Jan. 5.

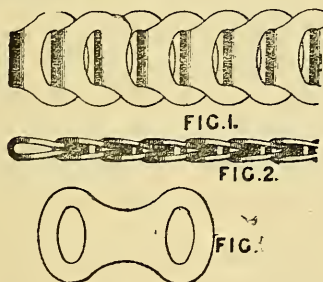
Manes, devices for arranging; clothing for animals; ventilation.—The object is to train rough manes and to induce the growth of 'hogged' manes,

training them at the same time. The device consists of a canvas hood A lined in part with felt B



and ventilated by holes C. The device is kept in place by a headstall E and tapes D for tying.

472. Martin, P. A. Jan. 7.

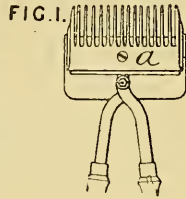


Straps and bands are made of a series of pierced staple-shaped links of leather or other pliant non-metallic substance, connected together as shown in

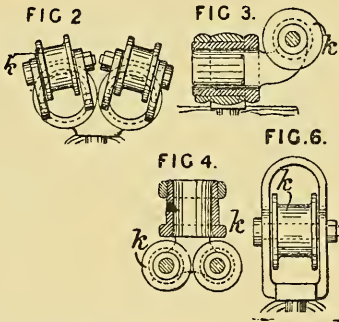
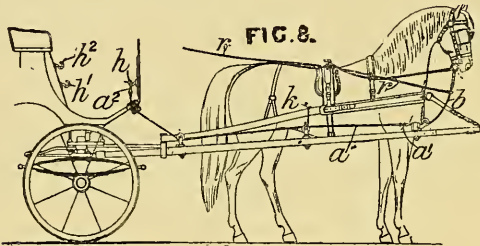
plan in Fig. 1 and in edge view in Fig. 2. Fig. 6 shows one of the leather blanks from which the band is made.

830. Kimberley, W. Jan. 12.

Horse clippers and the like; combs.—A comb *a* with a bevelled edge is fitted beneath the lower blade of a hair or horse clipper, and serves to arrange the hair before cutting and to regulate the length to which it is cut.



1157. Egyesy, G. Jan. 15.

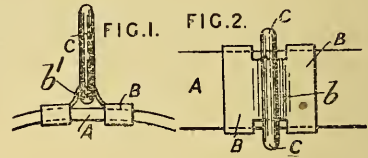


Stopping runaway horses; materials; fastening; bridles, reins for. An extra pair of reins or cords *a*, running over rollers *b* as shown, is attached at one end to a ring *a*² and at the other end to a ring *a*¹ to which are attached, on each side of the horse, two straps *b* fastened to the bit. The ordinary reins *r* are connected to the straps *b* as shown. The ring *a*² is normally held by the hook *h*; but should the horse start to run away the ring is transferred to the hook *h*¹, or for still greater control to the hook *h*², the reins *r* being pulled at the same time. The cords *a* are made of hemp saturated in linseed oil and then stitched into a leather casing.

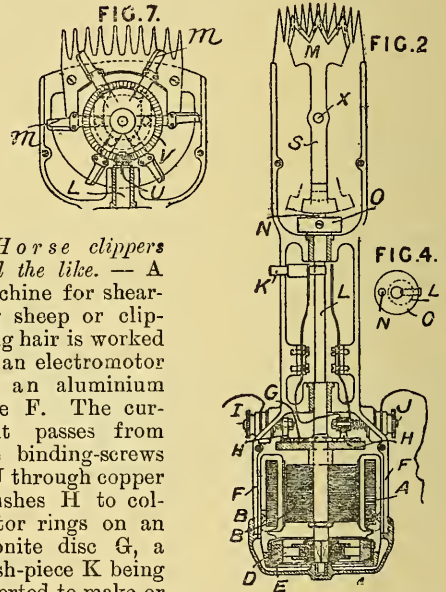
1446. Carr, H. L. Jan. 19.

Dog collars.—Relates to rings for dog collars &c. The ring *C* is connected to a sleeve running

freely on the strap *A*. The sleeve may be formed from an H-shaped piece of metal bent to form sleeves *B, B* and a looped connection *b*¹.



1771. Baines, W., and Norris, W. Jan. 22.

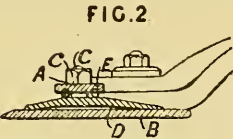


Horse clippers and the like.—A machine for shearing sheep or clipping hair is worked by an electromotor in an aluminium case *F*. The current passes from the binding-screws *I, J* through copper brushes *H* to collector rings on an ebonite disc *G*, a push-piece *K* being inserted to make or break the current.

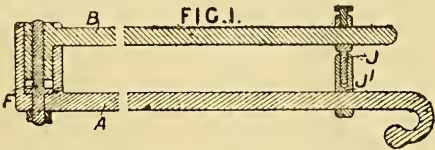
There is a stationary armature *A* and a revolving field *B* fixed to the spindle *L*. The stampings for the parts *A* and *B* respectively consist of rings toothed inside and out and shuttle-shaped pieces. Within the barrel commutator *D* revolve the brushes *E* consisting of arc lamp carbons. The lever *S* attached to the upper cutter *M* is worked by a crank-pin *N* on a disc *O* adjustably and eccentrically mounted on the shaft *L*, thus giving an adjustable throw to the crank. The motion of the cutter may also be varied by making the fulcrum pin *X* adjustable along the lever *S*. Fig. 7 shows a cutter with revolving knives *m* pivotally and extensibly mounted upon the bevel-wheel *V* gearing with the bevel-wheel *U* on the shaft *L*.

1928. Peddar, W. S. Jan. 25.

Horse clippers and the like.—Friction is reduced by ball bearings E between the cutter D and a plate A, held fixed by nuts c and bolts C passing from the comb-plate B through slots in the cutter-plate D.



sheep and other animals together, when dipping and performing other operations, consists of a pair of bars A, B, connected together at one end by a



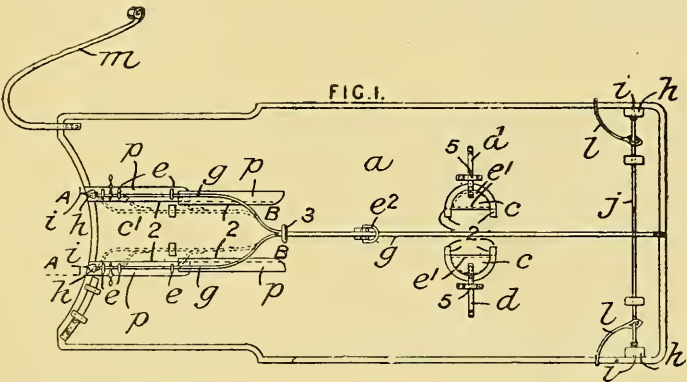
2134. Anthony, J. S. Jan. 27.

Hobbles.—A device for securing the legs of

screw F, and furnished at the other with an adjustable link J, J', which slips on and off the end of the shorter bar.

2147. Bigg, J. Jan. 27.

Clothing for animals; ventilation; fastening.—Relates to cloths for harnessed horses to prevent the animal and its harness from getting wet in rainy weather. The cloth a is slit on the lines A, B, and the slits are covered by flaps p, p, which are sewn to the part c' at 2, and are connected to the other part by buttons or by loops e, through which the cord g passes, the ends of the cord carrying tags i to enter bosses h with considerable friction. On pulling the cord g the flaps are freed, and, the stop 3 coming against the eye e', the whole cloth can be removed. The cloth is kept down in front by a neck strap m and at the rear by straps l kept in place by a cord j with fastenings i, as above mentioned. The straps l, m may be buttoned down. The cloth is ventilated by holes e' covered by hinged flaps c adjusted by straps d and loops 5.



2188. Clark, W. Jan. 27.



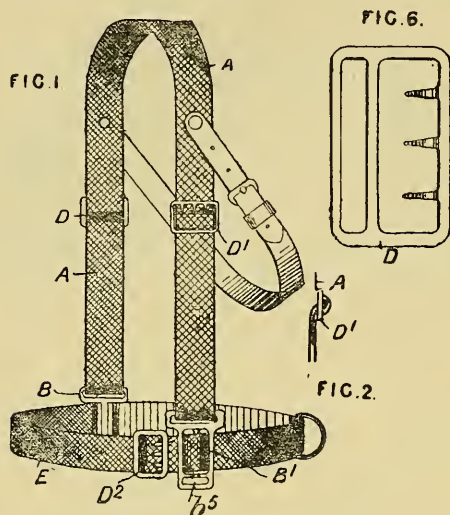
Horse clippers and the like.—Flexible shafts for animal clippers or shears &c. are formed of short lengths of tube C having semicircular projections D and gaps E engaging with each other and connected by universal joints formed of discs F having pins H entering holes in the projections D. The shafts may have coiled wire sheaths J and flexible covers K.

2433. Bull, P. Jan. 29.

Fastening pole-chains, hooks for. The removable tongue C is attached to the body of the hook by a projection E fitting into a notch. The spring F, hidden in the body, presses on the tongue, as shown.

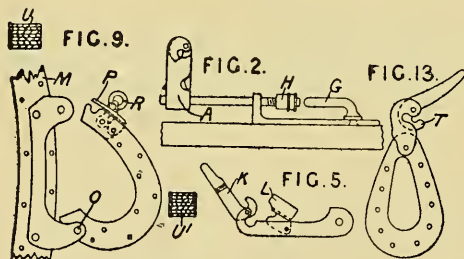


2828. Butler, H. H., and Astley, A. E.
March 1.



Bridles and halters.—The cheek-strap A of leather, webbing, &c. is adjustably fastened to the adjustable noseband E by metal buckles or fastenings B, B¹, D, D¹, D² of the form shown. Fig. 2 shows the way in which the straps are passed through the fastenings D, D¹, D². A bit may be attached by a strap to the loop b⁵.

3133. Simpson, W., and Scott, A. H.
Feb. 5.



Fastening; tugs, shaft; back and belly bands.—The main object is to release horses rapidly from their vehicles. The shaft tug, Fig. 9, having the section U¹, the edges of the layers of leather being turned outwards, is riveted to the backband M having a similar section U, and is made in two parts hinged at O and provided with a fastening in which a gap is closed by a hinged plate P forced down by a nut R. Fig. 13 shows another form of shaft tug, with a slip-hook T. Fig. 5 shows a form of slip-hook for attaching the traces to the hames. When closed, the hooked lever K enters into a notch in the top of the hinged piece L. Fig. 2 shows a similar hook A for connecting the backband to the shaft. This hook is similar to that shown in Fig. 5, but has no hinged part L.

The breeching is attached to a pivoted hook G, which may be fixed and closed by a nut H.

3152. Briscoe, J. N. M. C. M. Feb. 6.

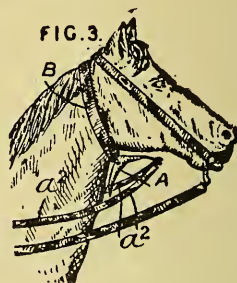
Saddles; collars, neck; pads for; materials; lining and padding.—The rubber pneumatic pads used for horse and bullock collars, saddles, &c. are strengthened by attaching to them by solutioning and sewing &c. a material of a wide fibrous texture, preferably manufactured from flax. The outside of the casing is covered with an absorbent and antiseptic material such as cork or cloth prepared from peat wool, or ordinary woollen &c. material soaked in peat-bog water.

3329. Bartrum, W. H., and Bartrum, J. A. Feb. 8. *Drawings to Specification.*

Halters.—The halter is secured to a ring at the top instead of the bottom of the nose strap.

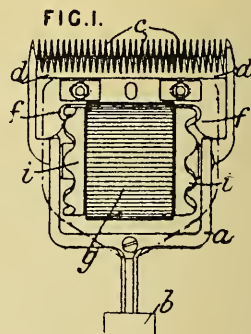
3437. Chambers, R. Feb. 9.

Stopping runaway horses; bridles.—The horse &c. is controlled by a curved and hollowed lever A supported by a strap B and operated by reins a². On pulling these reins the lever presses on the animal's windpipe.



3628. Cox, G. Feb. 11.

Horse clippers and the like.—The cutter d of horse or hairdressers' clippers is reciprocated over the comb-plate c by a roughened roller g, which carries teeth i, i acting alternately against the projections f, f on the cutter. The roller is mounted in a frame a with handle b, and is rolled over the back of the horse &c. while it is being clipped.



3729. Newburgh - Stewart, H. R.
Feb. 11.

FIG. 1.

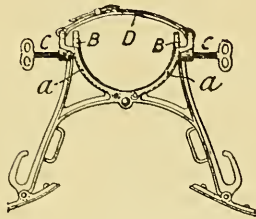
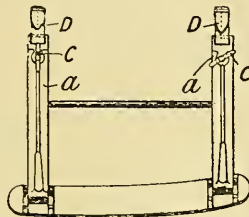


FIG. 2.

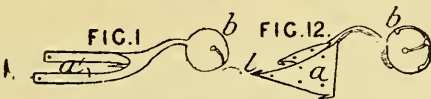


Saddles, pack.
Saddles for supporting guns and other round objects have curved arms B, B which may be adjusted within the rigid arms a by screws C. Straps &c. D may be used for keeping the article in place.

4120. Hall, W. Feb. 16.

Whips.—Relates to improvements in the process of shaping or tapering metallic articles described in Specification No. 11,192, A.D. 1894, by the use of an electrolytic bath, the articles forming the anodes, or by simply dipping them into an acid. Among articles which may be formed by this invention are whip cores. The articles are formed round or of a uniform shape by rotating them within or moving them through the electrolyte during the process. This may be done by supporting the articles from a rotating frame, so that the articles, or bundles of them, are also rotated on their own axes. The articles may be thinned, tapered, &c. by drawing them through an electrolytic solution, either at an intermittently or continuously uniform rate, or at a varying and gradually increasing or decreasing rate, or at an intermittently increasing or decreasing rate. Or the same result may be brought about by increasing or decreasing the intensity of the current employed while the wire or other article is drawn through the electrolyte.

4511. Jürgensohn, A. Feb. 19.

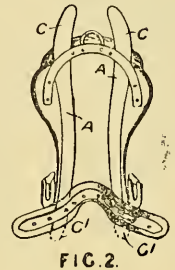


Spurs are provided with jingling bells or other alarm apparatus to render them useful to cyclists as well as horsemen. The bell b may be formed on a fork a, Fig. 1, secured to the boot, or may be detachably connected to a bent plate a, Fig. 12, with points d, or any other suitable form of attachment may be used. Where the bell &c. is detachable, it may be interchangeable with an

ordinary rowel, or a rowel may be mounted outside the bell, or points formed on the bell. By attaching the alarm apparatus to the boot, it sounds continuously whether the cyclist is riding or walking.

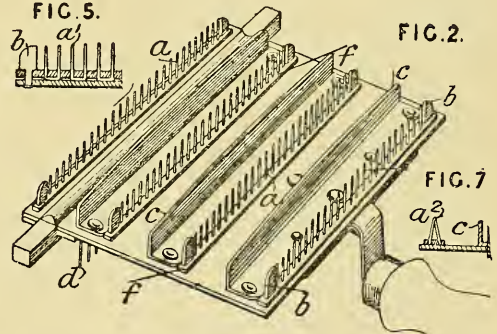
4636. Barnsby, J. A. Feb. 20.

Saddles.—Strips A of metal or other flexible material are fixed beneath the tree of riding saddles, and project at the front c', back c, or both. These strips are padded and bear on the horse's back.



5331. Folman, M., and Muler, M.
Feb. 27.

FIG. 5.

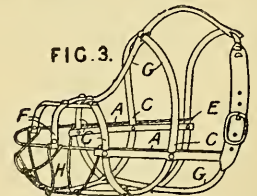


Currycombs.—The teeth of round or square curry combs are formed of strong pins a, a', a². They are protected by broad rounded projections b, and are spaced between the usual guide-strips c. The pins may be held in holes in the plates f by the main plate. A tail comb d may be attached.

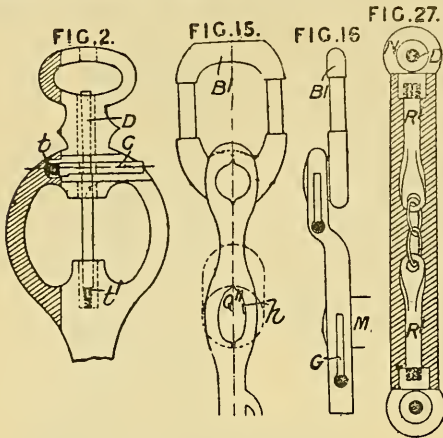
5873. Garstin, A. March 5.

Muzzles for animals.—A dog muzzle is made in two parts, one part G of leather &c. and a stiff part H of wire &c. The part H is formed with horizontal arms A which are passed through the vertical leather straps at C and fastened at E by loops &c. The horizontal arms thus throw the weight of the muzzle on the back of the head. The part H is connected to the straps at F by loops on the part H, by stitching &c., or by doubling over the leather and riveting as shown.

FIG. 3.



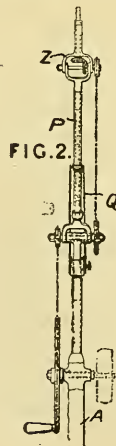
5969. Ponton, G. March 6.



Bits.—The mouth-bar is made detachable from the cheeks or rein rings, so that it may be readily changed. Fig. 2 shows the top of one of the cheeks of a carriage bit. The mouth-bar has an eye at each end through which passes the vertical rod D which is locked by a transverse rod C. The rods C, D are pressed outwards by springs t , t' and have interlocking notches. Fig. 27 shows a form of mouth-bar for these cheeks. It consists of the rods R , R' united by links and screwed into the eyes N for the rod D, Figs. 2 and 27. The mouth-bar is covered with rubber &c. The mouth-bar may be used without cheeks by passing rings through the eyes N. Figs. 15 and 16 show two views of a riding bit. The mouth-bar M has olive-shaped ends which fit into similarly-shaped holes Q in the cheeks and are locked therein by a spring catch G, the end h of which engages with a notch in the olive. The bridle ring B may be fixed in a similar way. By making the notch annular and the holes and projections cylindrical, the ring B may be made to turn freely.

6295. Clark, W. T., Pidduck, E. G., and Day, J., [Executors of Clark, W.]. March 10.

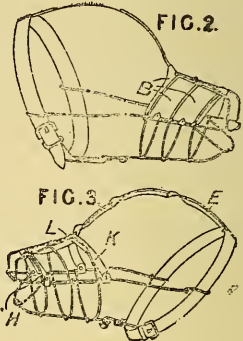
Horse clippers and the like, driving-gear for. Improvements in Specifications No. 4099, A.D. 1887, No. 4293, A.D. 1888, and No. 9246, A.D. 1895. Consists of multiplying chain gear upon a pedestal A and an arm P jointed thereto. At the free end of the arm, bevel gear in a jointed fork Z connects the last chain-wheel to flexible shafting. The first chain-wheel can be turned by hand or driven by power. The top of the pedestal and the end of the arm are made telescopic to adjust



the tension of the chains. The arm is normally supported at a steep angle by means of a spring Q.

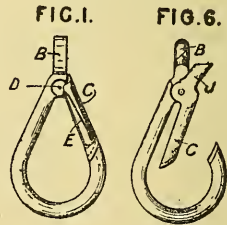
6522. Garstin, A. March 13.

Muzzles for animals.—The cage is made of wire &c. in any form and is prevented from coming into contact with the nose, lower jaw, or other parts of the dog &c. by a plate, perforated or otherwise, of leather &c. B, Fig. 2, or straps E, K, L fastened to the cage by rivets, hooks and eyes, &c., or by stitching or threading the wire in and out as shown. Pneumatic pads may be similarly attached. The straps H, K may be shorter than the wires above them, thus leaving a space between the straps and wires.



6789. Turner, H. March 15.

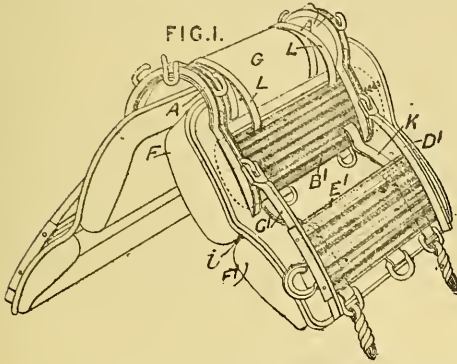
Fastening.—Snap hooks for pole-chains, dog chains, &c. are formed with a hollow tongue C in which the spring E is enclosed. The eye B may be in one piece and be fixed or swivelling, or it may be in two pieces one of which forms a tongue J in a piece with the tongue C.



6880. Camille, A. March 16.

Saddles, pack. The framework is entirely of metal and consists of two arches A, A' of L-section to which are hinged bars C', D'. The arches and the bars are connected by horizontal corrugated plates B', E'. These plates project beyond the arches and bars and carry the panels F, F', which are laced to them and are made in two sections so as to form a hinge at i . The arches are connected at the top by leather G over a sheet of fabric, the whole being riveted to the arches. The load is secured by straps L, L, and the girth by straps K, K. Hooks and loops

for various purposes are fixed as shown. Wedges may be inserted to lift the panels F¹.



6920. Coates, G. H. March 16.

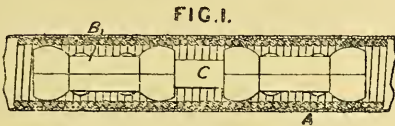


FIG. 2

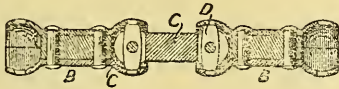
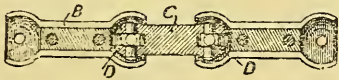


FIG. 3



Horse clippers.—Relates to flexible shafts for dental engines, horse-clipping apparatus, revolving hair brushes, &c. The shaft is enclosed in a casing A of coiled wire and fabric, and consists of links B and C arranged alternately. The links B consist each of a pair of semi-cylindrical shells which are riveted on a core. The links C consist of rods with enlarged and slotted ends in which are pivoted cross-bars D the ends of which are round and engage in holes in the enlarged ends of the links B.

7180. Duly, W. H. March 19.

Polishing-apparatus for.—The handle C of a burnisher for bits is arranged to swivel on the body D.

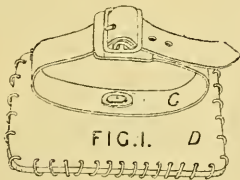


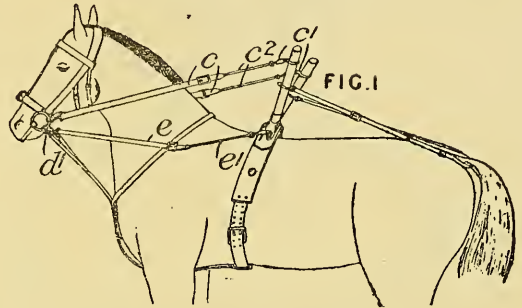
FIG. 2. C



7198. Cope, J. March 19.

Bits; stirrups.—In casting nickel or nickel-alloy articles such as the cheeks and mouthpieces of bridle bits, stirrup irons, and the like, a strengthening-core of steel or other suitable metal is laid in the mould and the casting formed round it. Suitable notches or projections are formed in or on the steel core in order to bind the whole together.

7302. Lack, F. March 20.



Horse breaking and training harness.—The flexible arms of the dumb jockey are of cane, whalebone, quill, &c., combined with other materials if desired, and are made slightly longer than usual. The reins are attached by spring hooks d¹, c¹ to the bit and arms respectively. The reins attaching the ordinary cavesson to the dumb jockey have a leather part c and an elastic part c² consisting of an elastic tube enclosing a loose cord to prevent over straining. Auxiliary straps e with elastic parts e¹ are attached as shown.

7397. Tranton, J. March 22.

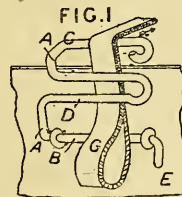
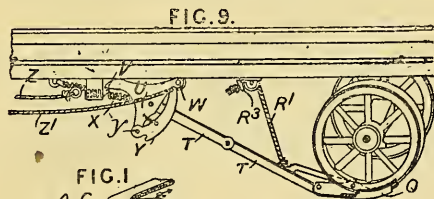
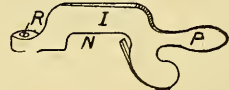


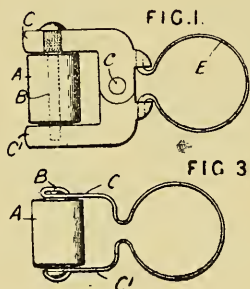
FIG. 7.



Rein holders.—The driving-reins G are held by a clip A of wire &c., which may be hinged at the bottom B or at the centre in such a way that a pull on the upper limb C forces another part D of

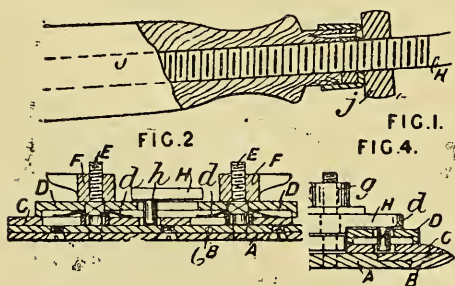
the clip to grip the reins against the dashboard &c. E or against a special arm or a pivoted piece attached to the arm &c. The Provisional Specification describes other forms of rein holders, in which the reins are held by cams or elliptical springs or by inclined bars between which the reins are wedged.

7581. Webster, D. G. March 23.



Terrets and like guide-rings; fastening.—Relates to a device for guiding reins, which may be firmly fixed in the place of terrets or may be simply looped to other parts of the harness. The rein runs beneath a roller A turning on a pivot pin B fixed to one of the jaws C, C' and entering into a loop or socket in the other. The rein is introduced by opening one jaw C', Fig. 1, on its pivot c against the spring E, or by springing apart the jaws, C, C', Fig. 3.

7736. Pettit, C. W. March 25.



Horse clippers.—The toothed part B of the comb plate A is made detachable, as shown, so that it may be readily renewed. The cutter C is pressed upon the comb plate by springs d which bear against a box-shaped cover-plate D adjustable by thumb-nuts F on the screws E. The lever H which operates the cutter has a pin h passing through a slot in the cover-plate and engaging with the cutter. The lever H is kept on its pivot by a thumb-nut. The handles J screw on to the levers H so that they may be adjusted in length; they are fixed by lock nuts j.

8521. Swaffield, N. A. April 3.

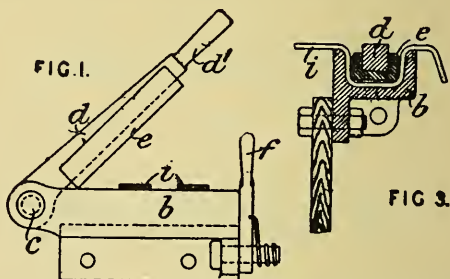


Reins; controlling restive horses.—The object is to prevent a horse from moving away when left attached to a vehicle. An extra rein is provided which has at one end a hook C for attachment to the wheel, and at the other end two branches provided for hooks A, B for the bit. A stop D which comes in contact with a ring on the shaft prevents the horse from being pulled back too severely.

9292. Ingram, J. G. April 12.

Muzzles for animals.—The muzzle is made of wire coated with rubber or rubber compound, preferably by dipping in a suitable rubber solution and vulcanizing. The muzzle may be coloured by dipping it in a coloured rubber solution or enamel.

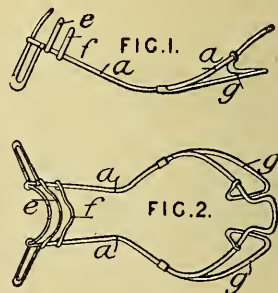
9441. Vollmann, W. April 13.



Rein holders.—The reins i are gripped between the channelled part b and the bar d hinged to it at c. The bar carries a rubber shield e, and has a handle d' which can be held down by a spring hook f.

9575. Doffoil, J. B. A. April 14.

Saddles.—The saddle-tree is wholly of metal solid or hollow, of round or flat form, or of U, V, &c. section. The parts may be united by soldering, welding, riveting, &c. A wood, cane, leather, &c. lining may be inserted. Figs. 1 and 2 show a military saddle made



from metal bars. Extra bars *e, f* are employed for strengthening the pommel and the cantle is supported by bars *g*. The seat may be attached to the tree by bending the leather around the bars *a* and riveting the two folds together. The girth may be attached directly to the tree and all lateral bands dispensed with.

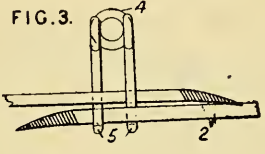
9894. Hendrick, M. E. April 20.

Rein holders.—Figs. 2 and 3 show a cleat which may be attached to the dashboard of a vehicle and used as a rein holder. It consists of a wire, and is secured by the ring 4. Each rein is passed over one of the loops 5, 5 and behind the other.

FIG. 2.

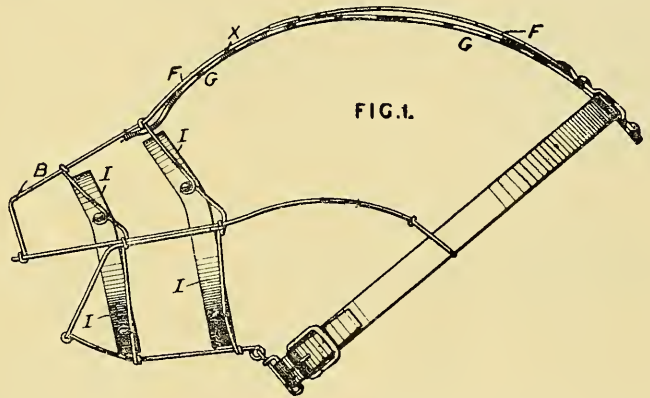


FIG. 3.



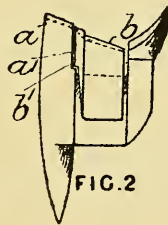
9900. Hillman, J. April 20.

Muzzles for animals.—A wire muzzle for dogs &c. is kept from chafing the animal by one or by two leather loops *I, I* and by a leather strap *G* beneath the wires *F*. The wires *F* may stop at the point *X*, and the strap *G* be continued to the nose *B*; the loops *I, I* may also be extended to meet the straps *G*.



10,068. Beebee, J. and Beebee, B. April 22.

Saddles, harness. The object is to strengthen the gullet plate. The backband bridge *b* is formed of metal &c. and is riveted &c. to a tree *a*. A projection at *b*¹ fits into a recess at *a*¹.



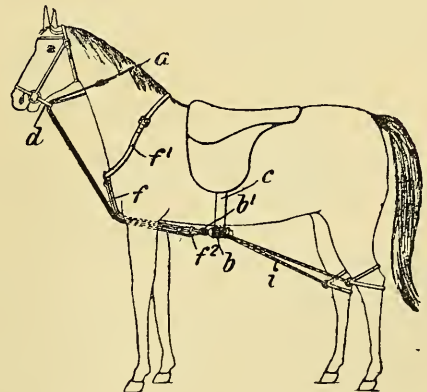
10,094. Marks, G. C., [Robergel, E.]. April 22.



Fastening.—Bits are fastened to the bridle or reins by the snap-hook shown. The hinge pin *D* passes through lugs *C* turned up from the base

plate *A* and lugs *F* in a piece with the tongue *G*. A spiral spring *E* acts on the tongue.

10,234. Davison, I. April 24.



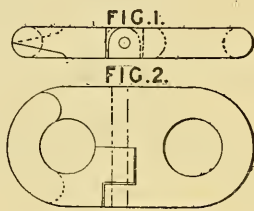
Horse breaking and training harness.—Relates to tackle for preventing rearing. A pulley-block *b* is

attached to the girth *c*, and through the block passes a rope *i* fixed at each end to the legs as shown. To a ring *b*¹ on the block is attached a rope *a* which passes through loops *f*² on the breast-plate *f* through the chin strap *d* and is tied around the animal's neck. The breast-plate is fastened at one end to the ring *b*¹ and at the other to the neck strap *f*¹.

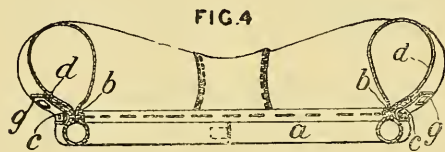
10,373. Berthold, O. April 26.

Fastening.—

Relates to coupling-links applicable for harnessing horses &c. One end of the link is made in the form of a hook; another hook pivoted on the link may be turned down to close the gap, and is held in place by the chain link &c. inserted in the eye.



10,630. Gulline, H. L. April 28.

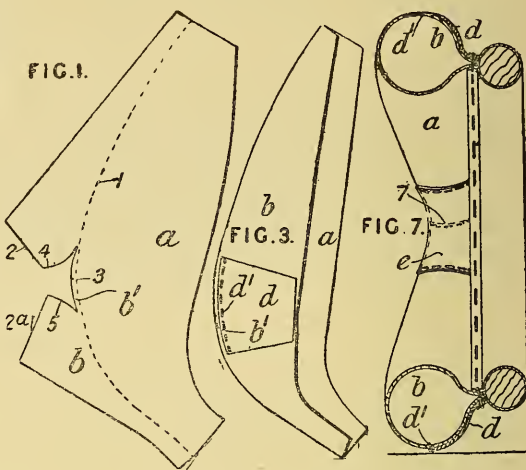


Collars, neck.—Fig. 4 shows a transverse section of the collar. The forewale, which may serve as the hames, is made of hollow metal bars *a* flanged at *b*, *c*¹ to enable them to be riveted &c. to the leather body part *d*. The bars *a* may be socketed together at their lower ends, and when used as hames carry the hame tugs *g*, rein rings, &c.

10,631. Gulline, H. L., Schwegel, W., and Connolly, J. April 28.

Collars, neck.—Each half of the collar body of a pneumatic or other collar consists of a single piece of leather cut to the shape shown in Fig. 1, folded on the line 1, and stitched or riveted &c. so that the edges 2 and 2^a come together and also the edge 3 with the edges 4, 5. A piece *d*, Fig. 3, is stitched at *d*¹ to the part *b*¹, Figs. 1 and 3, there being thus no projecting part to accidentally catch the trace hook. The ends of each half of the body are sewn together at 7, Fig. 7, and then the edges of the parts *a*, *b* (with the short edge *d* and the cover

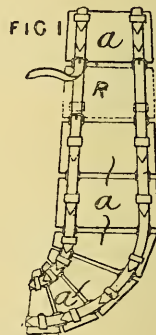
piece *e*) are stitched &c. together and to the rim, as shown in Fig. 7.



10,920. Sinclair, A. W. May 3.

Pads for; padding; collars, neck;

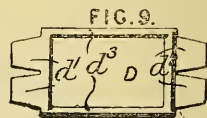
saddles.—Relates to padding and pads for collars, saddles, and harness generally, and consists in forming it or them in detachable sections so that any section may be removed to prevent contact with a sore place. Fig. 1 shows a detached pad for a horse collar. Any of the sections *a*, as at *R*, may be removed. These pads may be combined with a collar, saddle, &c. instead of the usual padding.



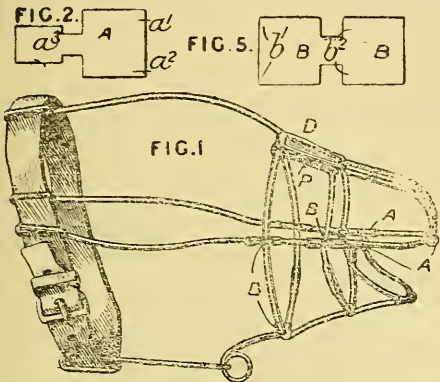
11,282. Bailey, J. May 6.

Muzzles for animals.—

Wires for dog muzzles &c. are joined together by metal clips A, B, D used respectively for T and X joints and for connecting parallel wires to which a rubber &c. nose pad *P* may be secured. The wings *a*¹, *a*², *a*³ of the clip A, *b*¹, *b*² of the clip B, and *d*¹, *d*² of the clip D are bent over the wires, as shown in Fig. 1. The edges *d*³ of



the clip D are also bent over the edge of the pad P. A tube C is used to connect wires that come



end to end. The wires may be indented where they cross to form a flatter joint. The wire muzzle thus joined together is coated with tin &c. to level up the joints.

11,357. Meacock, O. J., and Penn, H. May 7.

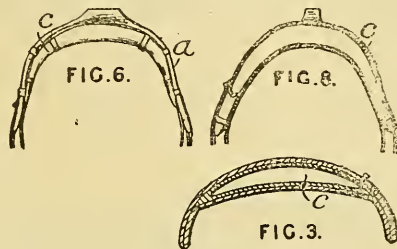


Horse clippers and the like.—Relates to the construction of a machine which may be modified to adapt it for shearing sheep, clipping horses, cutting human hair, cutting grass, or as a reaping-machine. The machine comprises a rotary star-shaped cutting-knife B which works over a plate or disc A having sharpened fingers or teeth on its leading edge. The knife B is driven by bevel gearing C¹ and C² from a shaft D, which, in the case of a horse clipper or like machine, is attached by a flexible shaft to any suitable source of power. A casing F is arranged to enclose the gearing and to bear with adjustable spring pressure upon the rotary knife B.

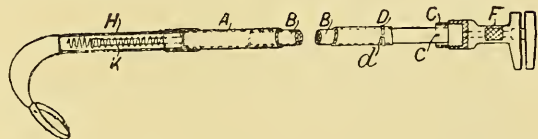
11,459. Wolfstein, E. May 7.

Saddles; pads for.—The saddle-cloth, which may be placed either above or below the saddle, has its central part inflated with air. If of rubber or the like the saddle-cloth itself may be inflated; if otherwise, a rubber &c. pad c, Fig. 3, may be attached to or enclosed in it, as shown. The saddle a, Fig. 6, may be provided with an air pad c in place of the usual stuffing, or the saddle c,

Fig. 8, may be in the form of an inflated rubber bag.

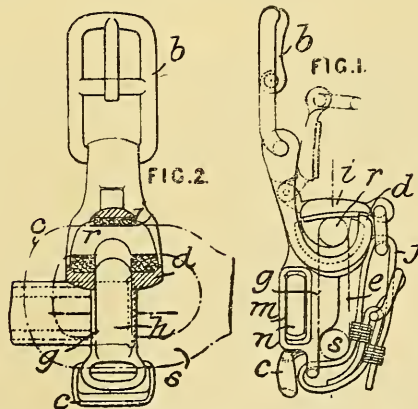


12,317. Weidenhammer, G. M. May 18.



Whips combined with inflating-pumps and spanners. At the end of the barrel A of the inflator is screwed a flexible whip stock H which encloses the flexible air-delivery pipe and contains a spring K for protecting it. A spanner F is screwed on the piston-rod.

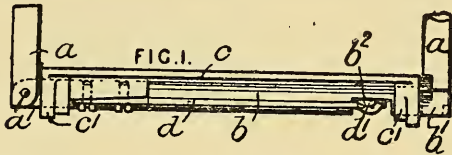
12,323. Lee, F. May 18.



Tugs, shaft.—Relates to shaft tugs for use with short shafts which have a loop at their ends to which a short trace may be attached. The upper bar r of the shaft loop c fits into the hook d of the tug, the lower bar s rests beneath the tug as shown, and the cross-bar h passes through a slot in the hook and lies in a groove g. The loop is kept in place by the latch i fastened by the buckle strap j,

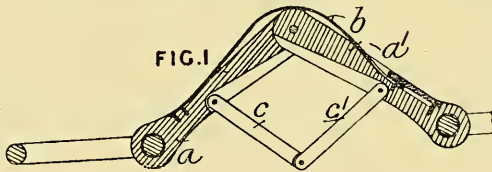
and the tug is fastened to the backband and belly-band respectively by a buckle *b* and loop *c*. The short trace *n* may be attached to the shaft loop, or to the loop *m* of the tug by enlarging the end of the trace.

12,457. Mrose, F. W. May 20.



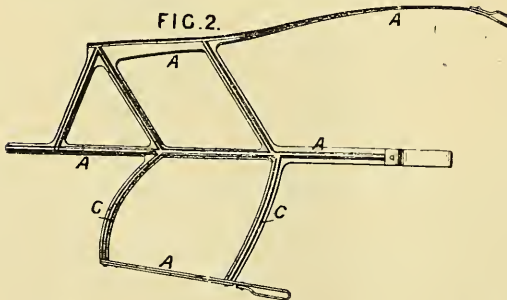
Stirrups.—The tread *c* of a safety-stirrup has flanges *c'* through which passes a rod *b* hinged at *a'* to one leg of the bow *a* and provided at its other end with a loop *b'* fitting over the end of the other leg. The tread *c* is kept from turning too freely on the rod *b* by springs *d* which press a piece *d'* against a flat *b'* on the rod. The tread has a curved projection which fits in a notch in one leg as shown. If the rider is thrown with his foot in the stirrup, the tread *c* turns on the rod *b* until its projection is clear of the notch, when the whole tread turns on the hinge *a'* and liberates the rider's foot.

13,773. Bethe, A. L. June 4.



Bits.—Links *c, c'* are pivoted to the main bars *a, a'*, which are normally kept in line by a spring *b*. On pulling the reins with considerable force, the bit opens out and presses on the tongue, palate, and lower jaw of the animal.

14,237. Howorth, W. H. June 11.

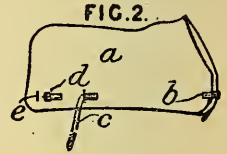


Muzzles for animals.—A muzzle for dogs &c. is made by stamping or cutting out from a sheet of

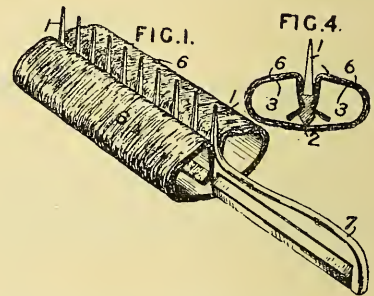
aluminium, steel, &c. one or two reticulated pieces *A* which are bent to muzzle form, as shown, and riveted. The metal may be flat or ribbed as shown at *C*. The Provisional Specification states that leather &c. may be used instead of metal.

14,687. Browne, E. H. June 17.

Fastening horse clothing. The sheet *a* is secured at the rear by two straps *c*, one only of which is shown, each of which is sewn to one side of the sheet, and after passing round the adjacent thigh of the animal and through a slit *e* is buckled at *d*. The front is secured by a breast strap *b* as usual.

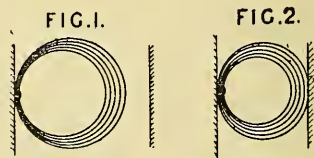


14,998. Wolcott, C. C. Dec. 17, A.D. 1896, [date claimed under Sec. 103 of Patents &c. Act, A.D. 1883].



Combs.—The Figures show a hair separator consisting of a number of teeth 1 held together in a suitable manner, combined with a hair dryer and cleaner consisting of an absorbent material 6 wound upon and held in position by a frame 3 provided with resilient flanges adapted to engage with shoulders on the bar 2 which supports the teeth 1. The device may be provided with a handle 7, but in some cases this is dispensed with. By this arrangement fibres of hair may be simultaneously separated into strands and freed from moisture, grease, &c.

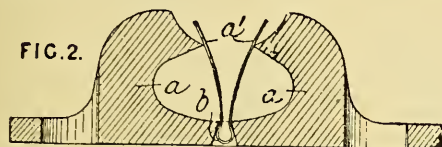
15,179. Ritter, R. June 24.



Fastening, spring attachments for. A number of rings or tubes of elastic material are placed one

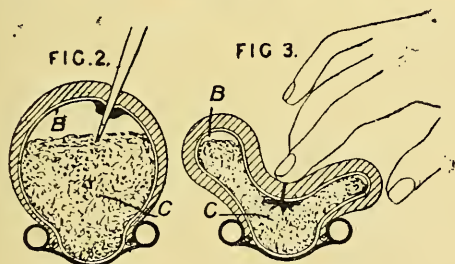
within the other eccentrically and fastened together along the line of contact. Fig. 1 shows the spring when free, and Fig. 2 shows it under pressure. The inner tube may be of greater thickness than the others, or a solid bar may be used.

16,321. **MacCormack, T. C.** July 10.



Fastening traces &c. A base-plate to be fixed to the vehicle carries either one or two hooks *a*, the openings to which are closed by a spring *a'* fixed in a slot *b*. When one hook is worn out the base-plate may be reversed and the other hook used.

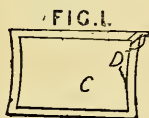
16,491 **Wapshare, R.** July 12.



Collars, neck.—Means are described for closing punctures in pneumatic horse-collars or similar air-inflated articles, and is shown applied to a pneumatic tyre. Within the air tube *B* is originally inserted some loose fibrous material *C*, and after puncture some adhesive solution is introduced at or near the puncture. The air tube is then pressed down upon the fibrous material, Fig. 3, whereby the adhesive material forms a matted patch within the tube and then closes the puncture.

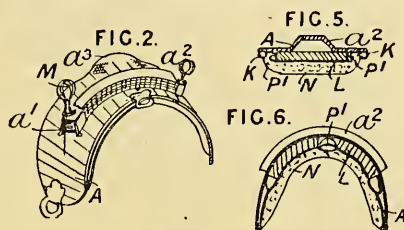
16,935. **Hamilton, H. M. McN.** July 16.

Horse-boots; elbow pads; knee-caps.—A bandage or guard for men or animals, either for surgical purposes or as a guard for use in playing games, consists essentially of an airtight or water-tight



chamber *C* capable of being inflated through a valve *D*. The chamber *C* may be formed by two pieces of rubber cloth or other material, attached at their edges to strips or bands furnished with suitable fastening-devices, such as lacings or straps

17,077. **Williams, G. H.** July 20.

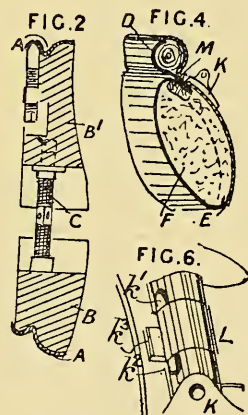


Saddles.—Fig. 2 shows a van pad, and Figs. 5 and 6 sections of it at right-angles to one another. The pad consists of a single piece of leather &c. *A* pressed to form a ridge *a'* for the backband and a rise *a''* for the shoulder. The leather &c. may be shaped in a press consisting of two blocks pressed together by a screw and nut. A facing *K* is fixed round the edge of the leather *A* by riveting &c., and the leather *A* is then fixed to the wood tree *L*. Metal plates are fixed to the mouth *a'* of the backband groove *a''* and terret rings *M* &c. as shown. The padding *N* is secured by clasps *P'* and by projections on the tree fitting into pockets in the padding.

17,078. **Williams, G. H.** July 20.

Collars, neck.—

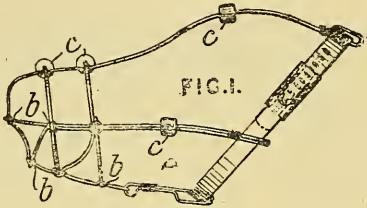
The front part of the collar is made of a piece of leather &c. *A* pressed to shape by blocks *B*, *B'* forced apart by a screw &c. *C*. Linings *D*, *F* are riveted &c. in place, a bead being formed at *E*. Suitable padding-material is inserted, or inflated bags may be used instead. Hames may be used or metal fittings *K* may be fixed to the wood strips *M* by screws. The traces are attached to plates *L* with pins fitting into the recesses *k'*, *k''* in lugs on the plate *K*, being kept there by a spring *k'''*. The fittings *K* also carry the terrets.



17,079. Williams, G. H. July 20. *Drawings to Specification.*

Tugs, shaft.—The leather forming the tug is closed by riveting the ends to a metal plate carried by the buckle frame.

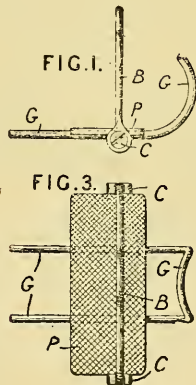
17,259. Willis, C. July 22.



Muzzles for animals.—In dog muzzles made wholly or partly of aluminium, the junction of two aluminium wires is bound round by a wire or strip *b* of a different metal which may be readily soldered. Loose cushions or rollers *c* of rubber, leather, &c. may be attached where desired in any form of muzzle.

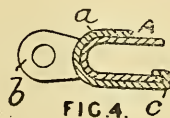
17,320. Steenken, C. July 22.

Stirrups.—The roughened tread *P* is pivoted at *C* to the bow *B*, which is made lower than usual. The foot is prevented from passing too far through the bow by an adjustable loop *G* fixed by screws to the tread. The loop serves also to liberate the foot should the rider be thrown.



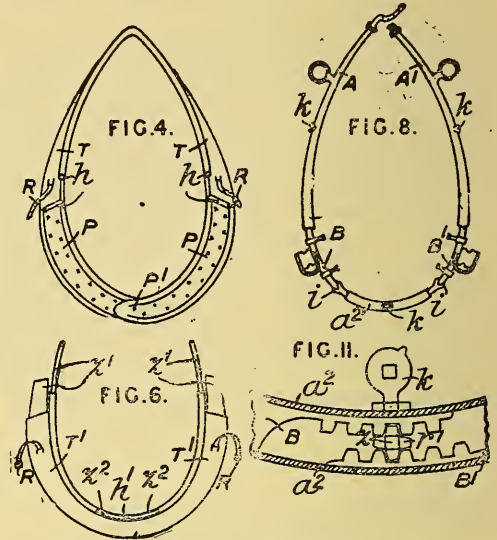
17,428. Parkes & Gnosill and Parkes, J. July 24.

Collars, neck, hame for. The hames are made of sheet metal, preferably steel, of U section, as shown at *A*. The opening of the U is at the forward or inner edge of the hame. The loop for the top strap and the eyes *b* for the trace hooks and rein



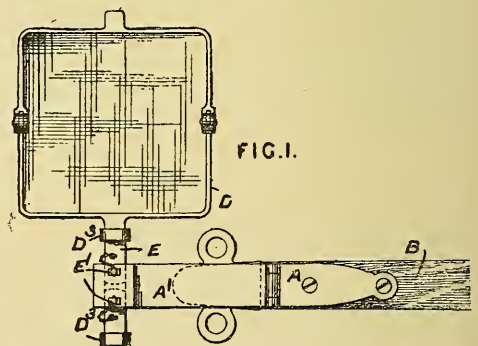
rings may be fixed by brazing or riveting. The base of the eye *b* may form a plate *a*, *c* overlapping the hame as shown.

17,638. Förtsch, F. July 27.



Collars, neck; fastening.—The collar is made adjustable to fit necks of different sizes, and comprises a pad *P* with taper overlapping ends *P*¹, a body in two parts *T*, *T*¹ which are buckled together by straps *R*, and, lastly, hames made in five parts *A*, *A*¹, *B*, *B*¹, and *a*². The projections *z*¹, *z*¹ on the part *T*¹ fit into sockets *h*, *h* on the part *T*, and at the base of the part *T*¹ projections *z*² fit into a sleeve *h*¹. The parts *A*, *A*¹ and *a*² are connected to the parts *B*, *B*¹ by teeth on the parts *B*, *B*¹ engaging with a toothed wheel *r*¹, the spindle *z* of which may be locked by a hinged flap *k*. Joints are made at *i*, *i*.

17,710. Walton, H. July 28.



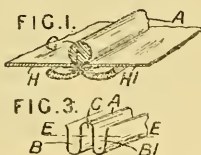
Nosebags.—Nosebags are attached to the shafts or the pole *B* by a hinged piece *A*, *A*¹ with a slot,

in which the ends E of the hinged metal frame D forming the mouth of the bag are fitted and held by pins E'. A ring D³ holds the mouth of the bag in the folded position.

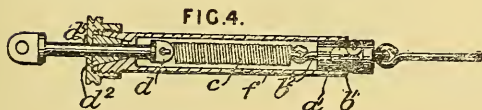
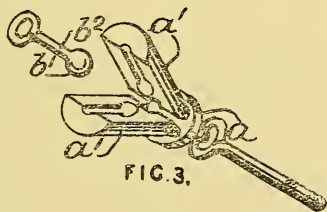
17,875. Beaty, R., Beaty, W., and Beaty, D., [*trading as Beaty Bros.*]. July 30.

Clothing for animals.—

The seams of clothing for animals and other articles are rendered waterproof by joining the edges of the material of the article by means of a strap A of rain-proof material folded into the form shown in Fig. 3, the edges of the material being respectively placed in the channels B, B', while a cord is placed in the channel C and the whole, after passing through a special folding-attachment to a sewing-machine, is sewn together along the line E E and is subsequently ironed and flattened to the shape shown in Fig. 1, in which H, H' are the edges of the material and C the cord, which, however, may be dispensed with.



17,923. Turner, D. L. July 30.

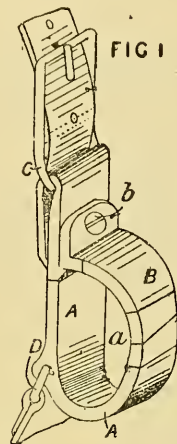


Fastening, spring attachments for. A device for releasing reins, stirrup leathers, and the like when subjected to an undesirable stress, consists of a spring c attached to an eye-bolt d at the inner end of a tube f, and at the other end attached to a link b², the ball head b¹ of which engages with the pivoted halves a' of a clutch so that, if the stress upon the device becomes too great, the clutch is pulled out of the tube and the link b² is released. The pull necessary to release the device is determined by the position of the bolt d in the grips d², and a spring pawl d³ engaging with notches on the bolt fixes the latter. In a modified arrangement,

18,000. Pitt, J. July 31.

Tugs, shaft.—

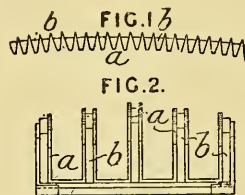
The tug is made of metal, and is in two parts A, B, pivoted together at b so that the tug may be opened to liberate the shaft. The part A is fitted with a buckle C and loop D, and the junction a may be inclined as shown or stepped.



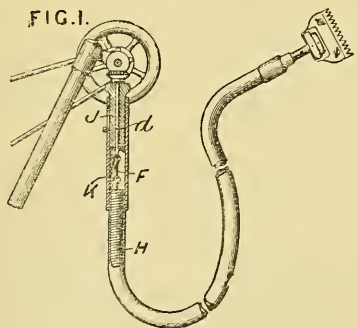
18,277. Meinert, T. Aug. 5.

Currycombs.—

The toothed plates a are in pairs, and the plates of each pair are separated by a plate b of rubber, so that by pressing on the comb the teeth have a longer effective length.



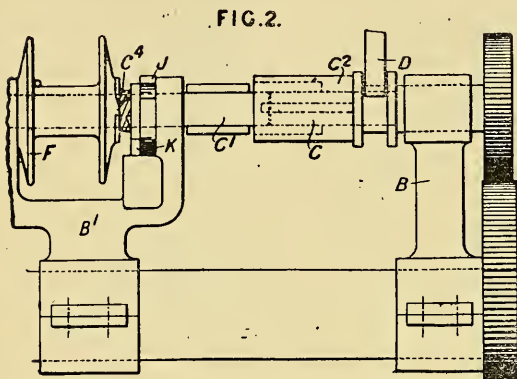
18,324. Gillette, G. H. Aug. 6.



Horse clippers.—Relates to flexible shafts for imparting motion to horse clippers &c. The chain F, which constitutes the shaft, is enclosed in a

casing H to which is secured a sleeve K adapted to telescope, but prevented from rotating, on the socket J forming the support for the rigid driving-spindle d.

18,406. McKenzie, J. Aug. 7.



Stopping and controlling runaway or restive horses.—The shaft C, supported in the bracket B and driven from the wheel hub by the gearing shown, may drive the shaft C' supported in the bracket B' by means of the sliding coupling-box C' operated by the foot or hand-lever D. The shaft C' has a screw thread c', a clutch J mounted thereon, and a loose pulley F with ratchet teeth which is connected to the reins by the belt. Should the horse become restive, the clutch moves on the thread c', and engaging the pulley F causes a pull on the reins. The spindle C' is prevented from being turned in the wrong direction by the spring pin K.

18,686. Stone, J. O., and Dance, J. W. Aug. 12.

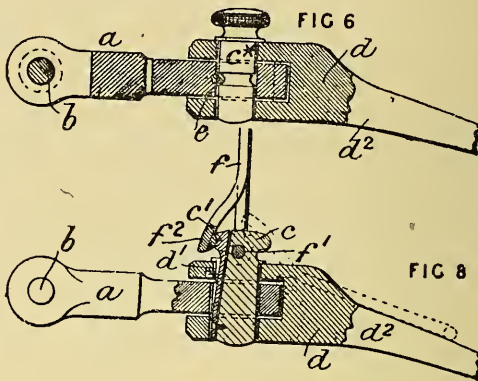
Bridles and halters; saddles; collars, breast; ornaments for unspecified articles.—

Relates to the inlaying of leather for

ornamental purposes, applicable in the manufacture of harness, bridles, reins, breastplates, fronts, saddles, &c. The inlaying is effected as seen in the sections of an inlaid strip shown in Figs. 1 and 2. The inlaid part is secured by pasting, sewing, or otherwise fastening upon it the undercut edges a of the leather. In Fig. 2, a rib is formed on the surface by the inlaid part. The inlaid strips &c. may be of leather or any other material.

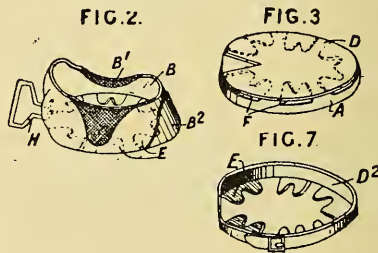


18,794. Ford, L. P. Aug. 13.



Fastening traces. Traces are attached to the body of a collar where no hames are used, or to the hames or the breast band, by a fastening consisting of a shackle a to the cross-bar b of which the trace is attached, and of a part d forked &c. at d' for attachment to the collar &c., the parts a and d being united by a pin c or c*. This pin may be locked in position by a spring catch c' fixed to the pin and engaging with a notch in the part d. The catch may be pushed back by hand, or by the end f' of a lever f pivoted to the pin c at f'. The pin c* may also be locked by a split pin e passing transversely through the piece a and engaging with a groove c' in the pin c*.

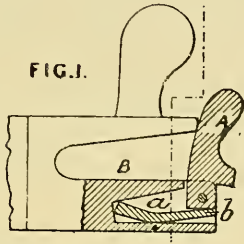
18,833. Barker, G., [Pfueger, E. F.]. Aug. 14.



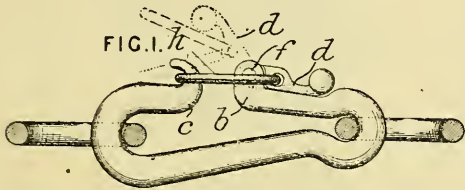
Horse-boots.—The undershoe or renewable tread A, Fig. 3, is made of rubber, leather, &c., either solid or hollow and filled with steel or iron filings, emery, corundum, &c. A metal plate D may be secured to it. The upper part B is of rubber or of leather with elastic insertions B', and preferably with a metal toe cap B'. This part is pulled over the hoof by a hook H. Fig. 7 shows another form of upper shoe, consisting of a strip D' to be buckled round the hoof. In all forms of upper shoe, metal plates E, preferably of L form, are riveted &c. in place, the horizontal members of the plates fitting into recesses F in the tread A.

19,258. Williams, J., and Lawton, C. Aug. 20.

Stirrup straps, suspending.—The spring *b*, bent as shown, is contained in a recess *a* in the bar *B*. The recess is open only at the rear end and where the lower end of the latch *A* enters it.



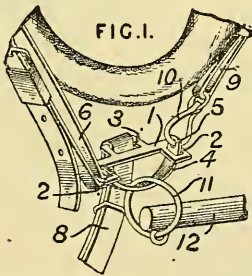
19,750. Johnson, J. Aug. 27.



Fastening.—Relates to hooks or connecting-links for harness, watch chains, lifting purposes, &c. The mouth of the hook is closed by a link *h* engaging with a hook *c* at one end and at the other with a lever *d* pivoted at *f*. When the hook is closed, the pull of the link *h* forces the lever against the part *b* as shown. The hook may be attached to a swivel or second hook &c.

20,038. Mackenzie, J. W., [Reynolds, S. A. D., and Newell, M. A.]. Aug. 31.

Fastening hames. The fastening consists of a bar 1 formed with a loop 3 on one side and two loops 2, 2 on the other, the loops 2, 2 being connected by a hinged bar 4 with an opening 5. The loop 3 is attached to the pole strap 8, the bar 4 to the ring 11 on the yoke 12, one loop 2 to the hame strap 6, and the eye 5 to a snap-hook 10 on the other hame strap 9.



20,039. Coates, G. H. Aug. 31.

Horse clippers and the like.—Fig. 4 shows an underside view of the head of a hair clipper with the cutters removed and certain parts in section, and Fig. 5 shows a vertical section through the centre of the tool. The upper or movable cutter *B*¹ is guided by the lower edge *D* of the head *A* of the tool, the edge *D* fitting in a groove. The head *A* has a boss *G*

for the sleeve *G*¹ of the movable handle *C*, which turns on the bolt *F* and has a projection *C*² for engaging with the cutter *B*¹. The stationary cutter *B* is held up against the movable cutter *B*¹ by a

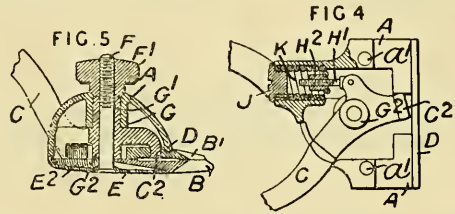
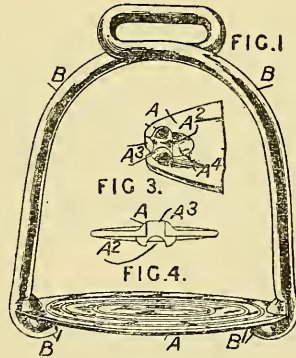


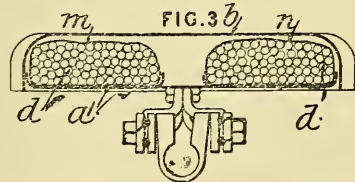
plate *E* fixed to the head *A* by a bolt *F* and nut *F*¹. The plate *E* is flanged at *E*² to embrace the cutter *B*, and its edge has its bearing opposite the edge *D*. The fixed cutter *B* rests with its centre on the sleeve *G*², and has holes fitting loosely over pins *a*¹. The movable handle *C* is pivoted to a bolt *H*¹ engaging with a nut *H*² fixed to a coiled spring *K*, the other end of which is fixed to the disc *J* bearing on a tubular piece on the head *A*. The tension of the spring is adjusted by turning the disc *J*.

20,146. MacPhail, J. Sept. 1.



Stirrups.—The tread *A* of the safety stirrup is kept in place by the resilience of the bow *B*, the hooked ends *B*¹ of which engage with notches and grooves *A*², *A*³, and *A*⁴ in the tread. The tread becomes detached if the rider is thrown with his foot in the stirrup.

20,307. Boyer, A. B. Sept. 3.



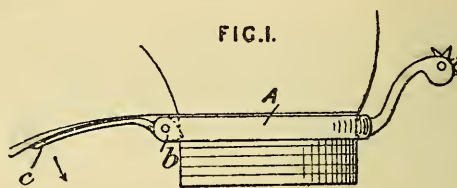
Saddles; stuffing-materials.—Relates to the construction of velocipede and other saddles and seats,

and consists in stuffing the seat with small balls of glass or of other suitable unyielding material. Fig. 3 shows a cross-section of a cycle saddle. The metal piece a^1 divides the saddle into two compartments m, n , which are stuffed with balls d , the whole being covered with leather b .

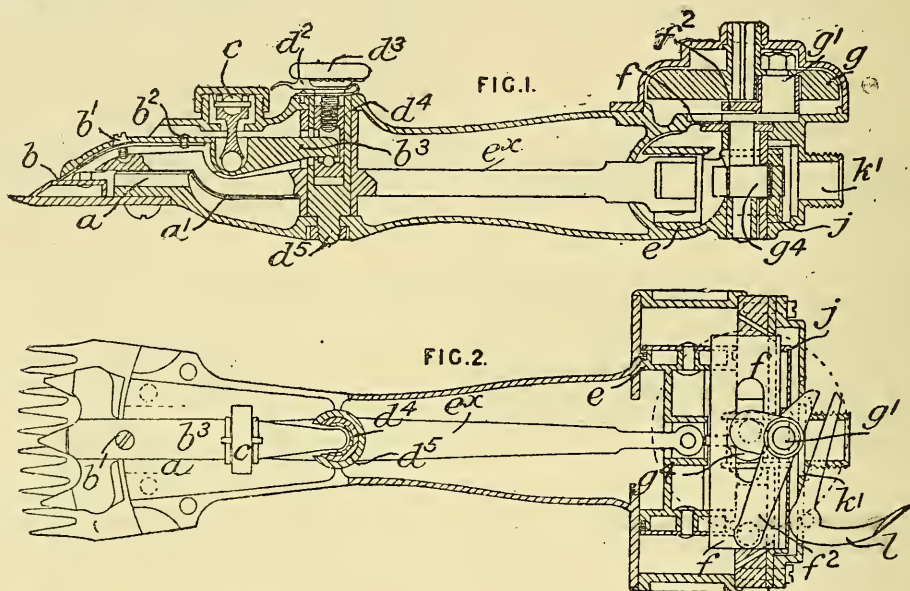
20,861. Schiemangk, M. Sept. 10.

Spurs.—The spur is clamped to the heel by a cam-shaped bar b , toothed or otherwise, which is

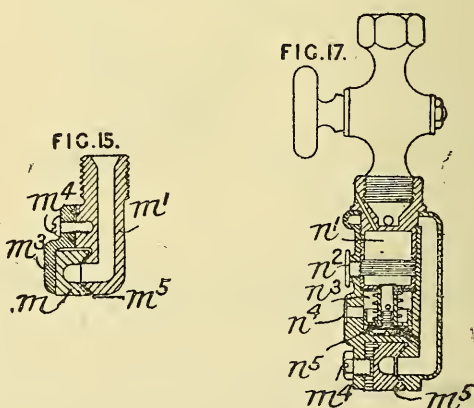
pivoted to the arms A and is provided with a lever or handle c .



21,282. Martin, J. Sept. 16.

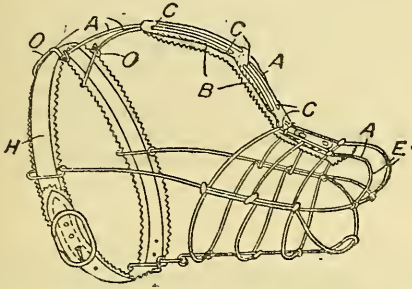


Horse clippers and the like.—Relates to clippers for sheep shearing actuated by compressed air. The knife-actuating lever e^x is acted upon directly by pistons e working in a cylinder placed transversely to the lever. The admission to and exhaust from the two ends of the cylinder are regulated by a slide valve j . The action is made continuous by means of a crank shaft g^1 and a flywheel g . The crank is connected to the pistons by a connecting-rod f^2 and a sliding plate f moving with the pistons. The valve j is actuated directly from the crank shaft by means of an eccentric g^4 connected to the valve through the exhaust opening. A small bell-crank lever l , which can be pressed by the thumb, is used to get over the dead point at starting. The connection to the air-supply pipe is made at k^1 by means of a union having a conical swivel joint m^5 , Fig. 15. The two parts of the union m, m^1 are held together by a clamp m^3 and screw m^4 . In the place of the part m^1 an automatic lubricator may be fitted, as shown in Fig. 17. Oil is contained in a reservoir n^1 filled from a hole and cap n^2 , and flows through the hollow piston n^5 , to a chamber n^3 and thence to a recess n^4 . When the air is turned on it passes to the clippers through a passage, an orifice in which allows the pressure to act on the underside of the piston n^5 , forcing it upwards so as to cut off the oil supply from the chamber n^1 while allowing the oil in the recess n^4 to pass to the machine. The exhaust



from the air cylinders is carried forward to the comb and cutters in order to cool and lubricate them. It passes under a muffle plate a^1 and through passages a . The tension arrangement for pressing the cutters upon the comb comprises a lever b^3 bearing against a rocker c , giving perfect freedom of movement, and an adjusting-screw and nut d^1 situated in the hollow pivot d^5 of the knife-actuating lever e^2 . The head d^3 of the adjusting-screw is provided with a ratchet and a spring detent d^2 to prevent it from slackening. A spring b pressing upon the cutter is riveted at b^1 to the lever b^3 , and its tension is adjusted by a screw b^2 .

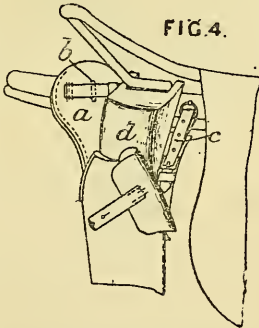
21,352. Garstin, A. Sept. 17.



Muzzles for animals.—The two top wires A of a dog &c. muzzle are curved outwards at the nose E, and at the back are spread apart until they meet the neck strap H, where loops O are formed. These wires A are padded by a pad B of leather &c. lined with felt &c., and the wires pass between the two layers at the points C. The other wires of the muzzle may be similarly padded.

21,531. Moeglich, F. Sept. 20.

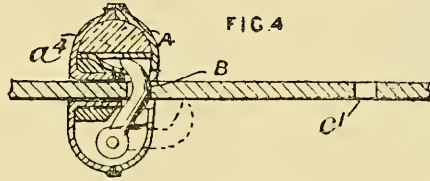
Saddles.—Relates to holsters for carbines. The holster is carried by the leather flap a secured to the saddle-tree by the staple b having a small strap put through it. The front of the holster is attached by the strap c to a ring under the seat. A leather wedge d prevents oscillation of the holster, and for the same purpose a tapering cushion is placed beneath the flap a .



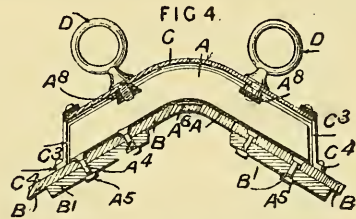
21,691. Fischer, F., [Roletschek, J.]. Sept. 22.

Rein-holders.—The button A is threaded on to the rein, or on to both reins, and is retained in place by the tongue B passing through one of the

holes c^1 . The button prevents the rein from slipping through the fingers, but it may also be employed to enable the reins to be looped over a projection on the vehicle, or the reins may be



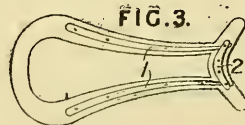
21,737. Liggins, E. Sept. 22.



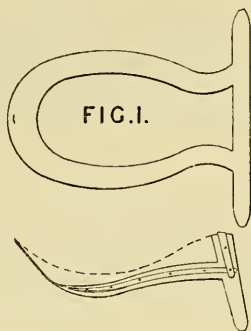
Saddles, harness. Saddles for spring-cart, van, and like heavy harness are formed of two metal troughs A, C of \sqsubset section bolted to the leather flaps B left whole and to the bearing-boards B1 covered by suitable padding not shown. The trough A for the backband is secured by bolts and nuts A4, A5, and the trough C is fixed to the trough A by bolts or by the terrets D screwing into cross-bars A8 on the trough A. The ends of the trough C are turned back to form the plates C3, preferably provided with flanges C4 for bolting to the flaps B. The crupper is attached to a plate A6 passing beneath a gap in the trough C.

22,272. Davis, S. Sept. 28.

Saddles.—Saddle trees are formed from a single piece



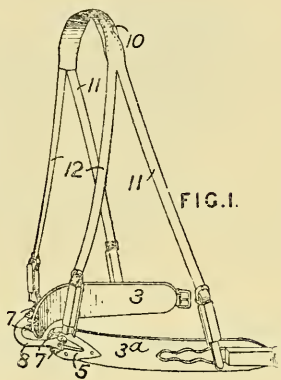
of vulcanized fibre, cut from a sheet as shown in Fig. 1, and bent and moulded to the proper form as shown in Fig. 3. The tree is strengthened by metal bands 1, 2 above and below.



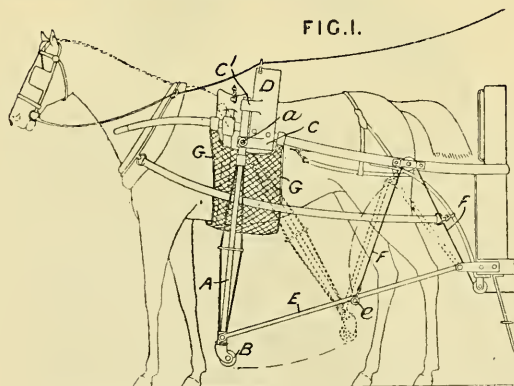
22,359. Nevling, G., and Dunlap, J. B. Sept. 29.

Collars, breast.—

The breast collar is in two parts 3, 3^a connected by a curved link 8 hinged to curved plates 5 riveted &c. to the parts 3, 3^a. Supporting - straps 10, 11, 12 are arranged as shown, and loops 7 are provided for the pads (not shown).



22,480. Keys, A. Sept. 30.



*Preventing horses from falling.—*Braced props A, having castor or swivel wheels B, are pivoted to brackets C formed with the yoke D which is secured to the shafts. Toggle-levers E, jointed at e, are pivoted to the props and are connected to the guided wire F leading from the driver's seat. When in the operative position, the parts occupy the position shown in full lines, so that, should the horse slip, it will be supported by the sling G

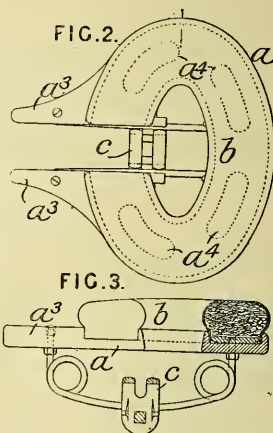
carried by the shafts, and the wheels B will touch the ground. The dotted lines show the parts in the retracted position. To prevent swaying, the top ends a of the props engage in forked arms c¹ when the former are brought into the operative position.

23,056. Deborde, J. Oct. 7.

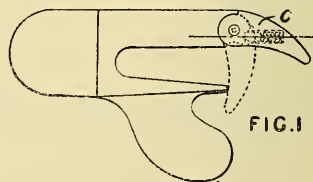
*Stuffing-materials.—*An elastic filling, padding, or cushioning material for saddles, cushions, &c. is made from gelatinous substances and a small percentage of formaldehyde. A mixture of about 125 parts of gelatine and 125 parts of glycerine is heated for about 10 or 15 minutes in a steam bath. The mixture is then preferably converted into froth and one part of formaldehyde added to it and the whole strongly heated to about 150° C. It is then poured into moulds, tubes, or the like to give it the desired form.

23,596. Wiglesworth, W., and Moore, A. W. Oct. 13.

Saddles for bicycles &c., also applicable for horse saddles &c. The base-plate a, of aluminium, vulcanite, &c., has a horse-shoe shape and is perforated at a¹ as shown. The plate is padded with a layer of cork, leather, &c. b, and secured by the usual clamp c to the cycle &c. In a modification, the peaks a³ are dispensed with.

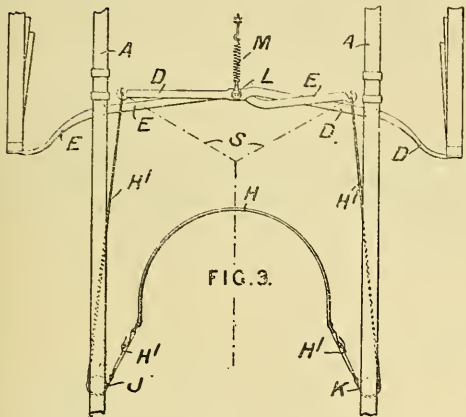


23,929. Bullows, W. L. Oct. 18.



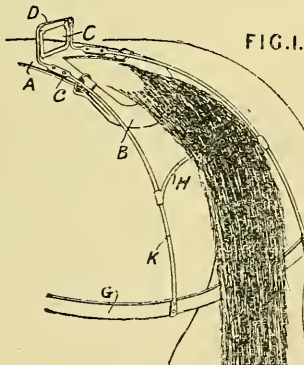
*Saddles.—*Saddle-bars are made with a solid body of wrought or malleable cast iron, and with a hinged guard or thumb bit C, having a spring catch fitted within it for holding it in either the open or the closed position. A roller may be mounted upon the body part.

24,098. Beilby, W. Oct. 19.



Fastening breeching. The breeching-strap H has extensions H' guided round pulleys J, K and connected to the ends of levers D, E, pivoted at L and fulcrumed to brackets carried by the shafts A. When the horse exerts back pressure in descending a hill, the strap H, through the connections described, puts on the brake.

24,238. McGintie, J. A. Oct. 20.



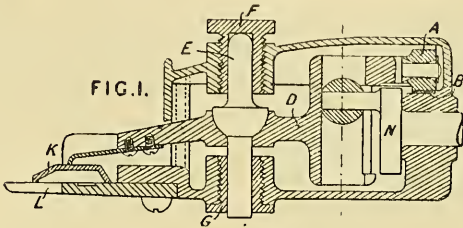
Rein-holders; breeching.—The reins are held in place by a L-shaped guide C with or without a hinged latch D. When the latch is employed, stops may be fixed to the reins to prevent them from being pulled through the guide beyond a certain distance. The guide is fixed at C to the tail strap A or crupper B, and is continued at K to join the strap G. An arched cross-bar H holds the tail outwards and prevents it from clamping the reins.

24,440. Pinder, W., and Waterhouse, D. Oct. 22.

Traces; straps and bands; materials.—Traces and other harness straps are made from a core of

cotton duck folded several times, coated with unvulcanized rubber &c., and then vulcanized.

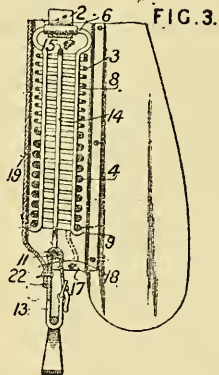
24,589. Burgon, F. Oct. 23.



Horse clippers and the like.—The cutter K is reciprocated over the comb L by means of the lever D, which is oscillated upon the fulcrum E with the revolution of a crank N the pin of which bears a ball fitting a socket in the lever. The rear end of the lever, which is furnished with a roller A, is supported by a race B upon the crank-shaft bearing, and the fulcrum pin E is supported by the lever in its bearings F, G, as by an arch, so that the pressure of the cutter on the comb is adjusted by screwing the end bearing F.

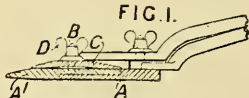
24,794. Hollister, W. F. Oct. 26.

Stirrup straps, suspending.—A short strap 13 attached to the stirrup is connected to the stirrup strap 2 by a spring connection consisting of two yokes 6, 8 and 11, 14 surrounded by springs 3, 4 with which they are connected by their hooked ends 9, 15. The spring 4 is made stronger than the spring 3, to suit different riders, a light rider bringing only the light spring 3 into operation. The springs are encased in a leather tube extended at 19 to form a flap and prolonged at 22 where it is riveted to the strap 13. The springs are rendered inoperative during mounting by a hook 17 passing through the hole 18 and below the bar 11.



24,843. Pettit, C. W. Oct. 26.

Horse clippers and the like.—Improvements on the invention described in Specification No. 7736, A.D. 1897. The comb plate is

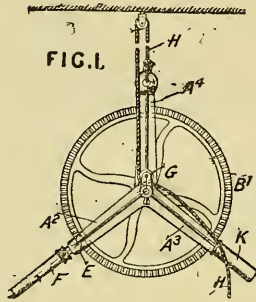


made in two parts A, A' rabbeted together and kept in place by the bolts B securing the cutter C. The bolts are riveted to the part A, and pass through holes in the part A' and through elongated slots in the cutter C above which wing nuts D are screwed on. If the teeth of the comb plate are broken or worn, a new part A' may be readily placed in position.

25,001. Haddan, R., [Stewart, J. K.].
Oct. 28.

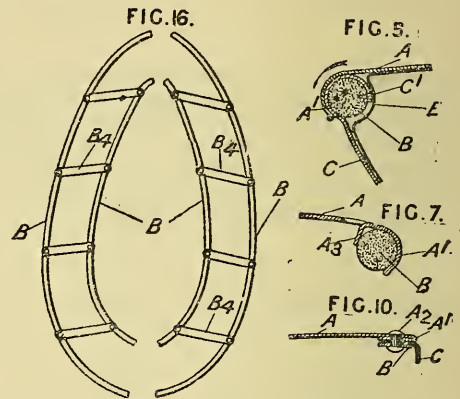
Horse clippers

and the like.—The flexible shaft F for driving animal-shearing and other tools is rotated by a wheel B' gearing directly or otherwise with a wheel E on the shaft. These wheels have their bearings on the rigid frame A², A³, the arm A³ terminating in a guiding-handle K and the wheel B' being turned by a crank handle (not shown). The gearing is supported from the ceiling by a cord H, one end of which is attached to the arm A⁴ pivoted to the frame A², A³, while the other end is adjustably secured by a roller clip G.



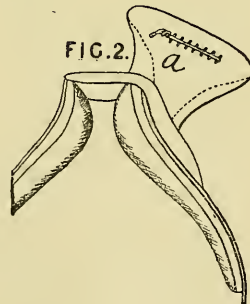
of shoddy, silk, or hard rubber. The sticky rubber is prepared by treating the commercial article, as received from the West Coast of Africa, with benzolene or a similar solvent and afterwards evaporating off the solvent.

26,815. Ford, L. P. Nov. 16.



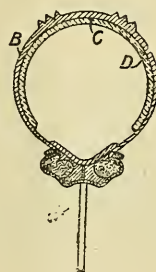
25,443. Scott, A. Nov. 2.

Saddles, riding.
The usual crutch and leaping head of a lady's saddle are replaced by a single inflated projection a. The Provisional Specification states that the projection when deflated may fit into a recess to form a gentleman's saddle.



25,651. Humphreys, W. H. Nov. 4.

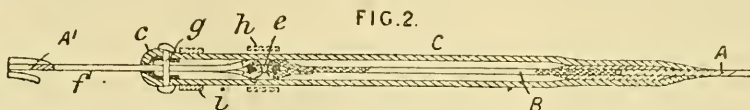
Collars, breast; collars, neck; saddles.—Relates to means for closing punctures in horse collars, saddles, and other hollow rubber ware, being shown applied to a pneumatic tyre. Within that part B of the article which is liable to puncture is placed a layer C of sticky paste india-rubber, which is covered with a layer D



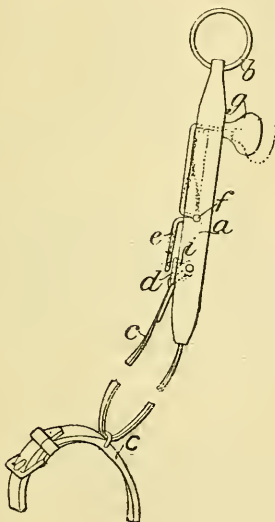
Collars, neck; saddles; lining and padding.—Relates mainly to securing the cover or lining C of the air pad E of a pneumatic collar to the rigid frame A. The edges of the cover are provided with a bead B which is received by or bears against the edge A' of the frame and is secured by the curved shape of the frame as shown in Fig. 5, assisted, if desired, by bent tongues A³, Fig. 7, or by rivets &c. A² through the doubled-back edge A', Fig. 10, or by studs fitting into keyhole slots in the edge. The head may be of cane or metal &c., and may consist of a split metal tube or a bar of curved or straight cross-section. The beads may be in sections united by cross-bars B⁴, Fig. 16. The cover C is attached to the bead by screws C' or cement &c., and may be folded in the direction shown in Fig. 5 or in the opposite direction. The method shown in Fig. 5 is preferably used for the lower or larger edge, and the opposite method for the upper or smaller edge, in which, further, the channel A' is deeper. Rivets &c. may pass through the frame into the cane B, Fig. 5. The Provisional Specification states that the invention may be applied to saddles, and that the outside of the frame may be covered with leather, cloth, &c. padded beneath, if desired, and attached by stitching &c. at the edges.

27,386. Hutchison, P. Nov. 22.

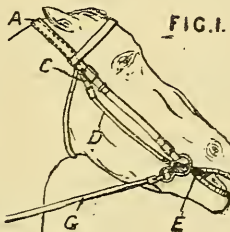
Bridles.—Each rein is divided into two parts A', A passing respectively to the bit and the rider or driver, and these parts are connected by a spring attachment consisting of a spring B of rubber, metal, &c. enclosed in a sheath C fixed to the part A. To limit the extension of the spring and thus obtain a firm control over the animal when required, a link *e* engaging with the end *c* acts as a stop. This may be aided by a pin *g* working in a slot *f* in the part A'. The link *e* may be replaced by a bar which passes through slots in the sheath C and carries a sleeve *h* for abutting against the sleeve *i*. The cheek straps connected to a curb bit contain a similar spring connection to relieve pressure on the animal's head.

**27,476. O'Brien, G. E.** Nov. 23.

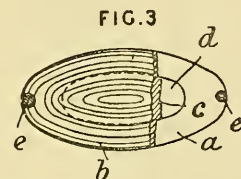
Dog leashes; whips.—The staff *a* carries at one end a ring *b* for attaching to the person and at the other end a strap *c* which is passed through a ring on the collar C, and carries a ring *d* for fitting over a pin *i* hinged to the staff. The ring *d* is kept on its pin by a spring trigger *e* pivoted at *f*, and provided with a knob *g*. By pressing on the knob *g* the dog may be released, one hand only being necessary for this. The leash may be used as a dog whip.

**27,521. Lake, H. H.,** [Ogden, A.]. Nov. 23.

Bridles.—To a strap C beneath the crown strap A are buckled straps D having extensions E, preferably of rubber, which cross in the animal's mouth and are connected to the reins G. No bit is used, the parts E taking its place.

**27,589. Parry, F. W.** Nov. 24.

Stirrups.—The tread *a* is fitted with a rubber pad *b* which has one or more projections *c* to fit into one or more openings *d* in the tread and has notches to fit round the base of the legs *e*.

**28,025. Thacker, R. E.** Nov. 29.

Saddles, harness. The edge of the skirt is protected and secured to the flap beneath it by a backward bridge or bead A of Γ section fixed down by screws &c. A plate D may bear against the underside of the end of the skirt.

FIG. 5.

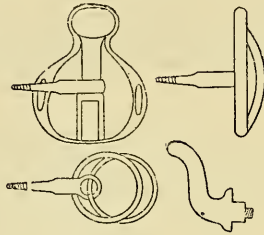
**28,064. Neal, W. H.** Nov. 29.

Whips.—Instead of the usual leather loop on the whip stock, a metal eye *a'* is used. This eye is formed on the metal core A, or is attached to it by a screwed sleeve &c., or the screwed sleeves &c. may engage with the end of the stock S.

28,080. Harrison, T. Nov. 29.

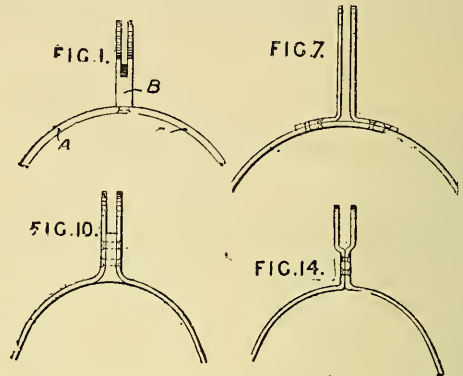
Bits.—The mouth-bar is replaced by two short screwed stems and central pieces to screw on to them. The central pieces may have any shape, so

that one pair of cheeks or set of rings will do for many different mouth-bars, whether jointed or otherwise. For a rubber bit a piece of rubber tubing may be passed over the end of the mouth-bar. Curved curb pieces taking beneath the horse's lower jaw may be fixed in slots in the cheeks by nuts. To make this more severe, the reins are attached to the curved bar shown in the top right-hand Figure.



operated by or formed on a pivoted lever J. The lever J, Fig. 2, is concaved as shown, so that by turning it the bolt is withdrawn. The arm C, Fig. 2, may be dispensed with, and the bolt G made to engage a hook holding back a spring bolt in the arm B. A notched ring turning on the part E, Fig. 6, and engaging with the end M of the arm C, may be employed to prevent accidental disengagement.

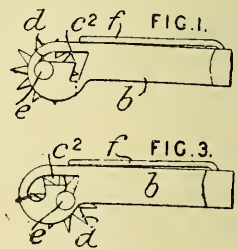
29,086. Withers, S., and Griffin, J.,
[trading as Withers & Griffin]. Dec. 8.



Spurs.—The bows or the bows and necks are made of flattened wire or of rolled or drawn strip metal. In the form shown in Fig. 1, the ordinary neck B is riveted, with or without a strengthening-plate, to the bow A of flattened wire &c. In the form shown in Figs. 7, 10, and 14, both neck and bow are of flattened wire &c. riveted in the various ways shown.

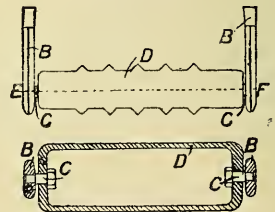
29,309. Hamilton, A. C. Dec. 10.

Spurs.—The rowel d can be placed in operative or in inoperative position by placing the pivot pin e at one or the other end of the slot c² in the neck b. A wire catch f keeps the rowel in either position.

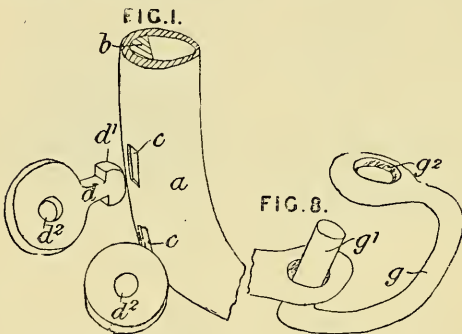


29,333. Slack, T., and Staveacre, J. H.
Dec. 11.

Stirrups.—The tread D, as shown in elevation and section on the line E F, consists of an open frame toothed at the edges and supported from the bow B by pivots C.



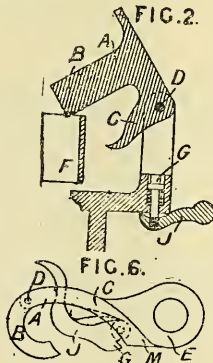
28,144. Metcalfe, C. Nov. 30.



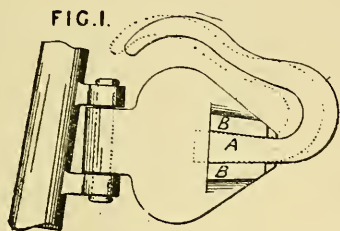
Collars, neck, hames for. The eyes d² for the bolt to which the draught-hook is hinged are fixed to the hame a by forming the shank d with a head d¹ for entering slots c in the hames and in a strengthening-bar b. The eyes are turned through a right-angle after insertion, and the slot c is filled up by a wedge &c. The shanks d may screw into holes in the hame and bar b. The chain uniting the lower ends of the hames is attached to the hames by a shackle g which is formed open and then hammered together in the cold state so that the pin g¹ enters the hole g².

28,931. Greb-Cleemann, J. P.
Dec. 7.

Fastening.—Traces &c. F are connected to the vehicle &c. by a slipping-device which consists of a part A pivoted at D and provided with an arm B for the trace &c. and an arm C for engagement with a spring bolt G, Fig. 2, or a projection G, Fig. 6,



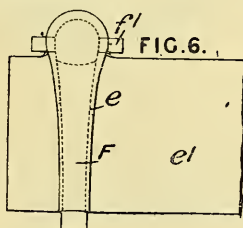
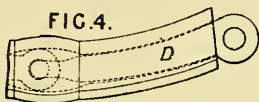
29,447. McDonald, M. Dec. 13.



Fastening traces. The shank of the hame hook, or equivalent ring, for fastening the traces is in two parts, dovetailed together as shown at A, B, so that the part of the hook &c. which receives the wear may be readily renewed without employing the usual welding process.

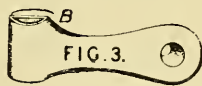
29,714. Nunn, J. H. Dec. 15.

Bits.—The rubber covering of rubber-covered bits is made readily detachable. A sheet of rubber is rolled round a core and vulcanized so that it may be unrolled and then sprung over the mouth-bar D, Fig. 4. Fig. 6 shows a method of rolling a sheet round a core for forming one of two rolls used for a free-jointed snaffle bit. The part *e* is first wrapped round the core F with pins *f*¹ for keeping an opening for the bit cheek, and then the part *e*¹ is wrapped round the part *e*.



29,818. Windsor, G. W. Dec. 16.

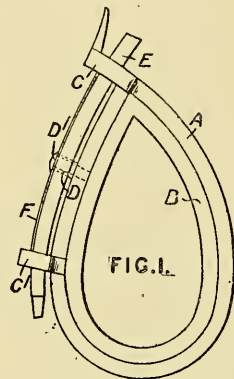
Collars, neck, hames for. A hole B of D section is punched out of the solid end of the draught shown in Fig. 3, and the draught



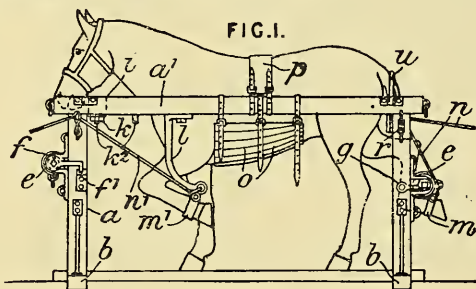
is slid over the hame and brazed in position. Rein rings may be similarly fixed.

30,230. Hill, C. T. Dec. 21.

Tugs, shaft.—The metal shaft tug A, formed with or attached to loops C, C¹, has its edges bent round to fit recesses in the india-rubber, leather, or other lining B, or the latter may have bifurcated edges to receive the respective edges of the shafting. The strap E engages with the projection D on the tug A and has a spring plate F, and all of these are secured by the screw D¹.



30,839. Voss, C. J. F. Dec. 30.

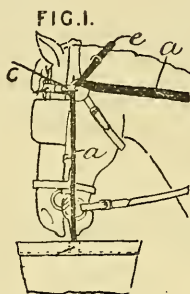


Animals, stocks for holding, during shoeing. The horse, ox, zebra, &c. to be shod is placed between the parallel bars *a*¹ of the framework *a*, *a*¹, *b* and kept in position by rollers *e*, *e*, a bar *i*, and a curved arch *u*, all of which are removable, and by broad straps *o*, *p*, buckled in the position shown. All the parts are suitably padded. The bar *i* is adjustably fixed by a cottar *k*, through an eye *k*², and the rollers *e*, *e* are fixed by a hook *g* and by the handle *f* bearing on the part *f*¹. The hoofs to be shod are drawn up by loops *m*, *m*¹ and ropes *n*, *n*¹ which pass through rings on the rollers or on a removable bar *l*, and are fastened by cleats *r*.

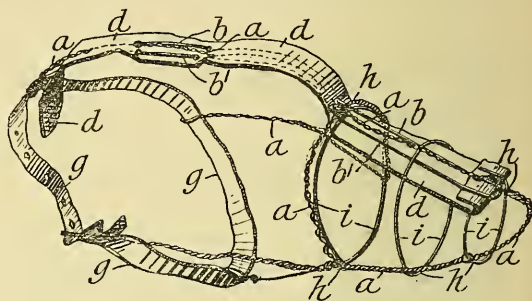
A.D. 1898.

730. Hibbert, B. Jan. 11.

Nosebags, suspending. The nosebag is suspended by a strap, cord, or chain, &c. *a* which runs freely over hooks or pulleys *C* attached to the browband and is secured to the collar or saddle &c. The strap *a* may be the bearing-rein. As the horse lowers its head, its mouth sinks deeper into the bag. A cross-strap *e* limits the greatest distance between the mouth and the bag.



two wires *b*, *b'* are used threaded or otherwise attached to a protecting-strip of leather &c. *d*, which passes from the neck strap *g* to the nose,

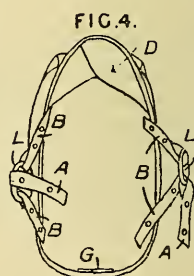
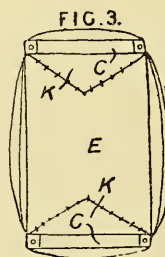
**754. Procter, T., and Ireland, A.** Jan. 11.

Muzzles for animals.—In a muzzle for dogs &c.

where it is folded over. Twisted wires *a* are used, so that at the points *h*, where they cross other wires *i*, the connection may be made by twisting, without the use of solder.

1060. Hill, T. W., and Hill, B. Jan. 14.

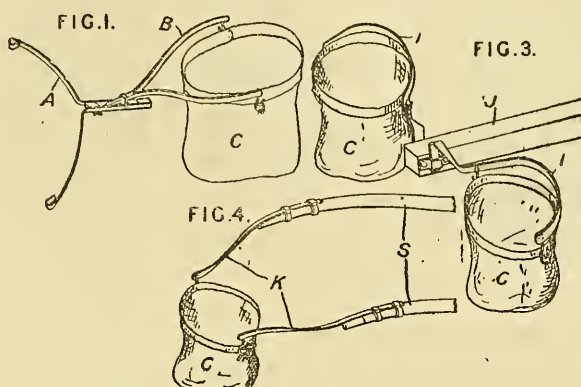
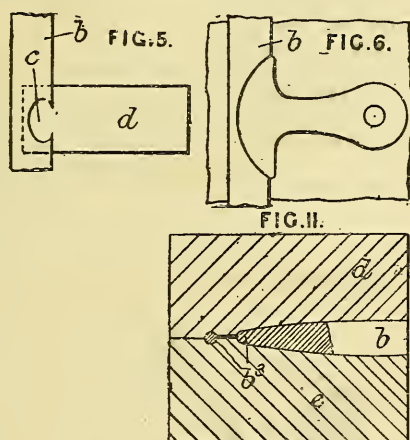
Nosebags.—The bag is preferably made of coconut fibre matting or manilla, and is bound round the top with leather &c. The bottom *E* is sewn beneath a block, preferably rectangular with rounded ends, which is afterwards removed. The sides are folded right across the bottom and sewn down, and then the corners *K* are sewn down, as shown. The bottom of the bag may be covered with leather, canvas, &c., strengthened by two or more leather straps *C*. The suspending-strap *A* may be secured to rings *L* connected by straps *B* to the bag. To prevent waste of food if the bag is tossed up, a lapped gusset *D* or gussets of webbing, netting, &c. is or are fixed at the back of the bag. The gussets may be stretched out by a rubber &c. cord in their free edge. A strip of bag to hang down loosely inside the bag.



webbing &c. *G* may be fixed at the front of the

1083. Hammersley, T. J., and Flatman, T. Jan. 14.

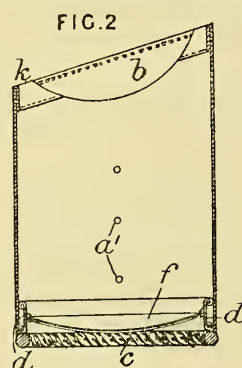
Nosebags, supporting. The bag C is supported from the collar or from the shafts or pole, in the latter cases by hooking it to a pair of bars K, Fig. 4, or to a single curved bar I, Fig. 3, fitting into sockets on the shafts S or pole J, and in the former case by hooking it to a Y-shaped piece B, Fig. 1, the stem of which either fits into a socket on the collar or is adjustably pivoted or otherwise attached to another Y-shaped piece A hooked to the trace rings.

**1242. Cooper, S. A. Jan. 17.**

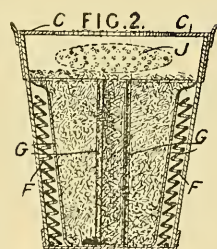
Collars, neck, hames for. Relates to the manufacture of hames by welding and stamping. A recess c is made in a straight metal bar b of D section, a red-hot blank d is attached to the bar by forging or stamping &c., and the bar and blank, raised to a welding heat, are welded and then stamped between dies to the form shown in Fig. 6. The ends of the hame are tapered, and the terminal eyes b' are formed by drop-stamping between dies d, e, and the bar is afterwards bent to the desired curved shape. The recess c may be dispensed with. Separate draught hooks or lugs therefor and lugs for rein rings may be attached by welding and subsequently shaped between dies. Hooks may be substituted for the loops b'. The Provisional Specification states that the draught-plate may be made separately by drop-stamping and attached by riveting or brazing.

1302. Thomas, E., and Thomas, J. E. Jan. 17.

Nosebags.—The bag has a perforated bottom f removably attached to a ring d supported on or in a piece with the ring foot c of rope, wood, metal, &c. The bag has ventilating-holes a', and is preferably cut back at the neck part k. Waste is prevented by side flaps b or by contracting the mouth of the bag by a draw string.

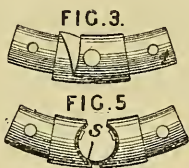
**1454. Heather, W. G. Jan. 19.**

Nosebags.—Springs F in suitable casings G are attached to the top and bottom of the bag to draw the bottom up as the food is consumed. The bag is ventilated at J and the mouth is closed by a perforated diaphragm C.

**1486. McDougall, J. Jan. 19.**

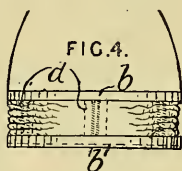
Collars, neck.—The horse-collar is wholly divided at the top and the hames, enclosed in the fore-wale, as in Specification No. 24,327, A.D. 1895, are hinged or otherwise connected

together at the bottom so that they may be opened out a certain distance only sufficient for putting the collar over the horse's neck. Fig. 3 shows one form of hinge, and Fig. 5 a method of connecting the hames by a spring S riveted &c. in place. In another form of hinge, the motion is limited by a T head engaging in a groove. The top of the collar is fastened by a buckled strap and a thumb piece &c.



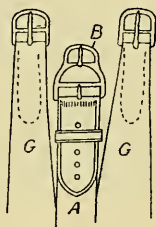
1773. Stewart, S. R. Jan. 22.

Nosebags.—The bottom b^1 of the bag is pulled up by springs d so that the level of the food is always near the mouth b of the bag. Fig. 4 shows the bag when all the food has been consumed.

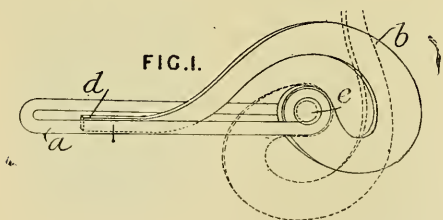


1998. Jessel, R. P. Jan. 25.

Saddles.—A spare stirrup leather A is kept on the girth G and is used to strengthen it. The free end of the stirrup leather carries a detachable double buckle B.



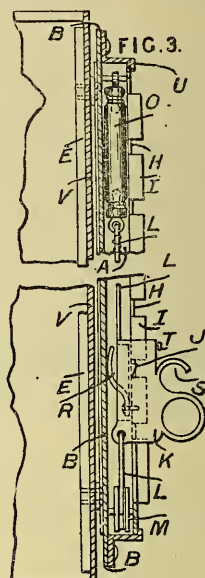
2074. Gierth, F. W. R. Jan. 26.



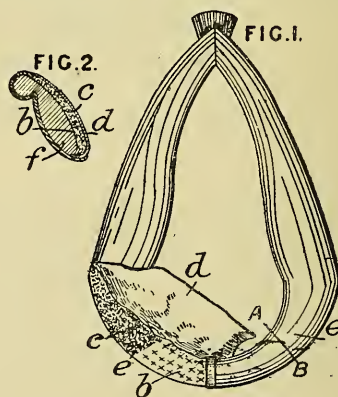
Fastening traces. The tongue b of the hook is pivoted at e and so formed that the strain upon it brings the point d within the frame a . For further security the point d may engage with the frame a , forming a spring catch.

2170. Hewens, A. Jan. 27.

Nosebags.—The bottom of the nosebag is drawn up, as the food is consumed, by cords L, one on each side of the bag. Each cord is attached at one end to a spring O and at the other end to the piece K and passes over a pulley M. The spring and pulley are fixed to the casing A, and the piece K has a hook S which is connected to the strap suspending the bag. The back-plate B of the casing A is riveted to a plate E within the bag V. The piece K slides in a longitudinal slot in the casing and has lateral projections J for engaging with transverse notches H at the sides of the slot. The sides of the slot between the notches are flanged at I. Normally the projections J do not engage with the notches; but if the horse tosses the bag the projections are forced into them by the spring R and the piece K remains stationary. The bag may be held fixed in its lowest position by the engagement of the hook T with a hole at U.



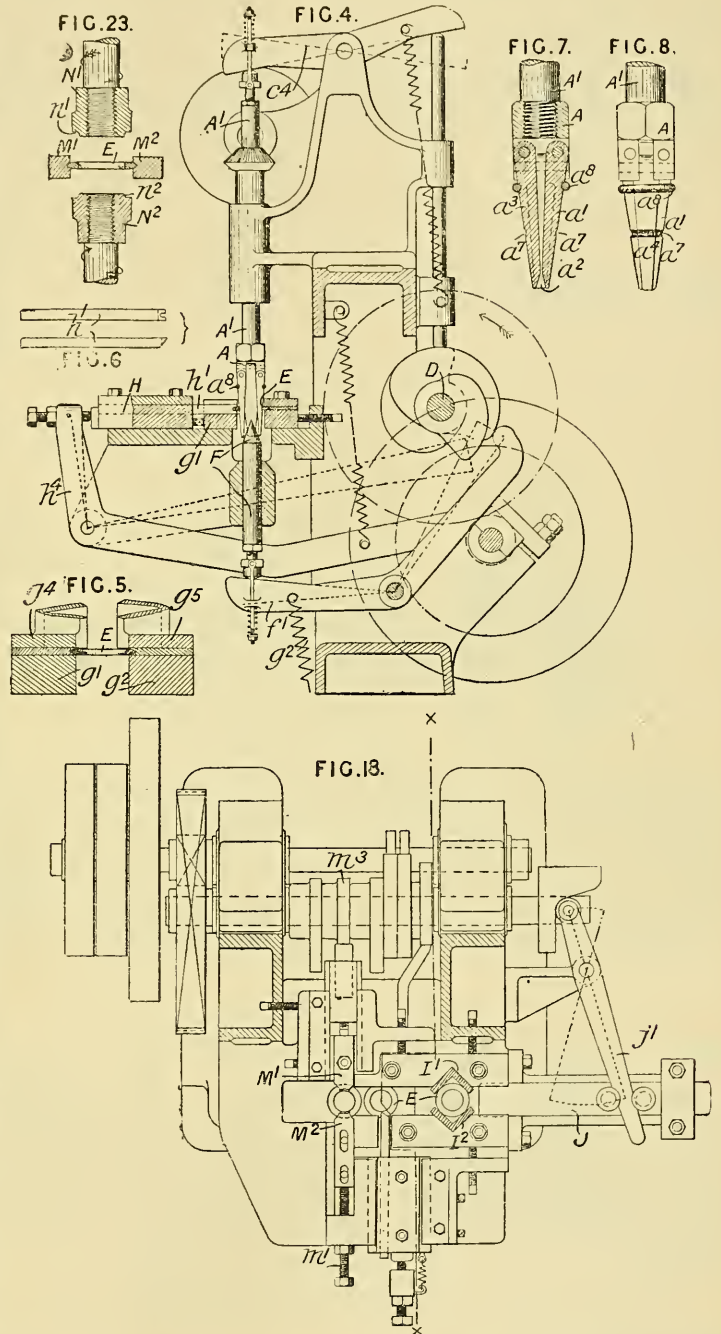
2201. Loveday, T. Jan. 27.



Collars, neck.—Fig. 1 shows a back view, and Fig. 2 a section on the line A-B. A lining b is sewn to the barge of the fore-wale and quilted after the straw f has been introduced. A layer of flock &c. c is then placed in position from e to e , or where required to ease any sore place, and the outer lining d is drawn over it. The Provisional Specification states that instead of the usual drugget a composition of bran, rye flour, and glue is used for the back of the collar.

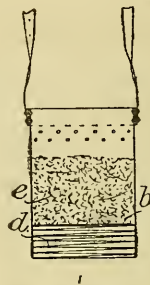
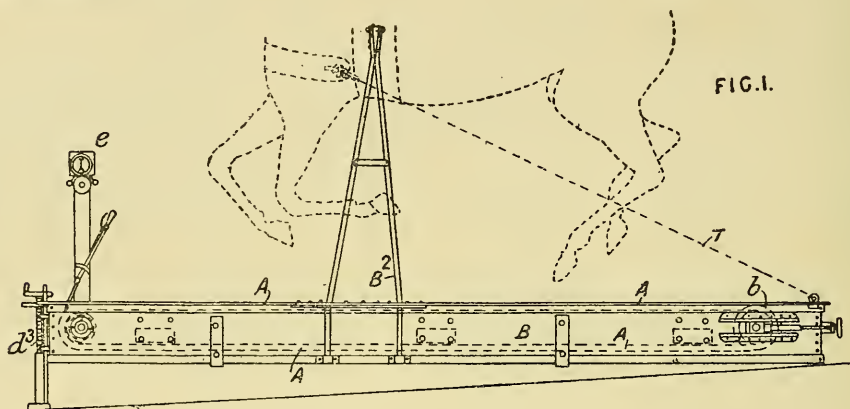
2459. Brooks, J. W. Jan. 31.

Lassos.—Relates to an apparatus for machining lasso rings automatically. The rings are first turned on their peripheries and sides, and are then finished inside by a milling-tool. The two operations may be performed consecutively in one machine. Fig. 4 shows a vertical section through the turning portion of the machine. The ring E is held by a chuck A on a revolving spindle A¹. The chuck, as shown separately in Figs. 7 and 8, consists of four or more conical fingers a¹, a², a³, a⁴, which are drawn together by a rubber ring a⁸, and are expanded by a conical spindle F, Fig. 4, so as to hold the ring in the groove a⁷. The chuck A and the spindle F are raised and lowered by cams on the shaft D and levers c¹ and f¹ respectively. The outside of the ring is turned by a tool h, Fig. 6, held in a slide H, which is advanced by a lever h¹ driven by a cam on the shaft D. As the outside of a ring is finished, the chuck collapses, and is raised clear to allow another ring to be placed in position. A pile of ring castings is supported between angular uprights I¹, I², shown in plan in Fig. 18, and the lowermost ring is pushed into position below the chuck A by a slide J actuated by a lever j¹ and a cam on the shaft D. The rings pass along guides formed by plates g¹, g², g⁴, g⁵ shown to a larger scale in Fig. 5, and the ring which has been turned on the outside is pushed on by the next ring into position to be milled on the inside. The ring is gripped by jaws M¹, M², Fig. 18, of which M¹ is advanced by a cam m³, and M² is set in a fixed position by a screw m¹. The tool for milling the inside of the ring is of exactly similar construction to the chuck A, and is operated in the same way, milling-edges being formed in the groove a⁷. Alternatively, a pair of milling-bosses N¹, N², Fig. 23, with cutting-edges n¹, n², may be used to machine the insides of the rings. The chuck A may be used to hold the rings when turning them up by hand in an ordinary lathe, a plate being fixed on the slide-rest to stop the ring at the groove a⁷.



2562. Arnott, L. J. M. Feb. 1.

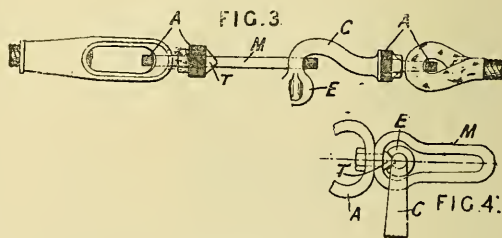
Nosebags.—The bag has a false bottom *b* pressed up by a spring *d* so as to keep the food *e* within reach of the animal.

**2595. Burgess, N.** Feb. 1.

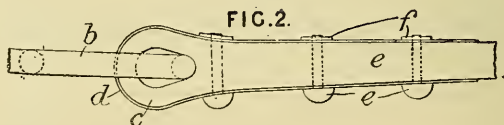
Training horses.—Relates to apparatus for use on board ship to exercise or train horses &c. The apparatus consists of a framework *B*, adjustably inclined by a screw *d*, on which is mounted an endless band or platform *A* running over rollers *b* at each end. The horse is partly supported by uprights *B*² and controlled by traces *T*, and as the platform gives way beneath its feet it is compelled to trot or gallop &c. An indicator *e* is provided for showing the distance the horse has moved relatively to the platform, and an alarm may indicate when a certain distance has been covered. The platform consists of transverse wooden laths riveted &c. to parallel belts supported by antifriction rollers, or the laths may be hinged together by long rods.

2902. Eeckhout, P. van. Feb. 4.

Fastening traces &c. Rings *A* carried by the parts to be attached are respectively connected to a swivelling link *M* of keyhole form and a hook *C* with an enlarged head *E*. The head is gapped on one side to correspond with the projection *T*, so that the hook must be turned through an angle as shown in Fig. 4 before it can be attached or detached.

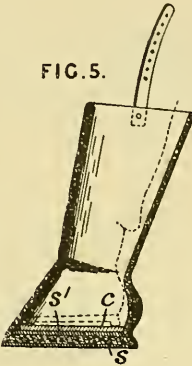
**3125. Elston, G.** Feb. 8.

Traces.—The ends of traces *c* that engage with hame draught rings *b* are strengthened, protected, and prevented from stretching by a doubled metal plate *d* secured to the traces by bolts and nuts *e, f* or by rivets &c.



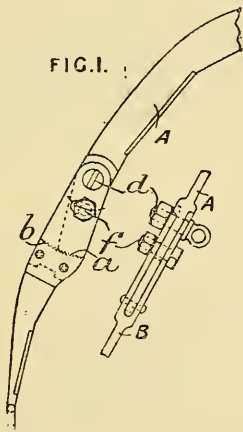
3491. Cain, W., and Hall, F. L. Feb. 11.

Horse - boots. — Water, oil, or liquid medicaments are applied to a horse's hoof by a boot formed of leather, rubber, papier mâché, or aluminium &c. formed in the shape shown and preferably without a seam and attached by straps at the top. The boot has an inner and an outer sole *s'*, *s* respectively, and may have an extra sole *c* when the shoe has calks upon it.



3640. Reichwald, A., [Krupp, F.]. Feb. 14.

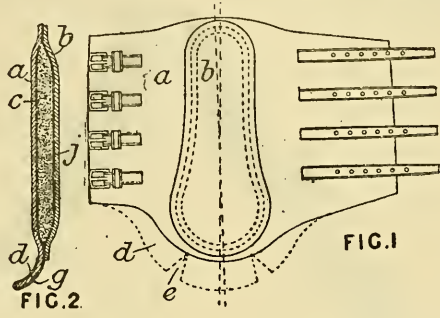
Saddles, pack. Relates to adjustable front and rear arches for mountain guns. Each arch consists of a central piece *A* and adjustable end pieces *B* connected together by bolts and nuts. The ends of the pieces *A*, *B* are formed at their edges (as shown) or sides with engaging teeth *a*, *b*. The teeth *b* may be on a piece fixed to the piece *B*, or hinged thereto and adjusted by a bolt, or on the shank of the lower bolt itself. Adjustment is effected by loosening or removing one or both of the bolts *d*, *f*, disengaging the teeth, re-engaging them in the position required, and tightening the bolts again.



4182. Frost, T. Feb. 19.

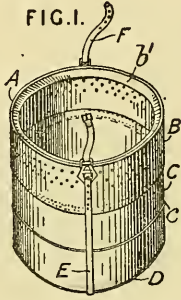
Horse-boots.—The ankle boot consists of a piece of unlined woollen material *a*, such as kersey, on the inside of which is stitched slightly unsymmetrically a piece *b* of the same material. Between the parts *a*, *b* is a padding of flock &c. *c* separated from the kersey by a waterproof material *j*. The piece *a* is prolonged at *d*,

notched at *e*, bent outwards, and covered with leather *g* to form a flap to protect the fetlock.



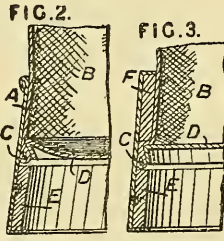
4338. Mussell, J. Feb. 22.

Nosebags. — The bag, preferably of oval section, consists of a leather &c. top part *B* perforated for ventilation, a leather &c. bottom *D*, and an intermediate part *C* of canvas &c., preferably waterproofed. The part *B* has an inwardly-inclined flange *b'* to prevent the escape of the food, and the bag is kept in shape by a steel &c. ring *A* and one or more rings *c*. Buckled straps *E* are arranged to vary the depth of the bag, which is suspended by the straps *F* in the usual way.



4477. Maitland, C. G., and McCallum, C. Feb. 23.

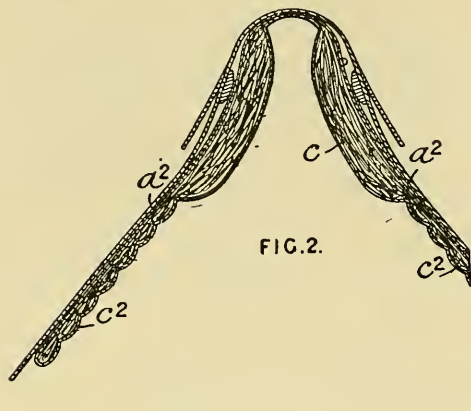
Nosebags. — The fabric *B* of the bag is removably connected to the flanged bottom *D* by a band *A* between which and the edge of the bottom *D* the edge of the fabric containing a wire &c. *C* is gripped as shown. The bottom and band may be of metal or wood. A wood ring *E* may be secured beneath the bottom *D*, and a second ring *F*, Fig. 3, may be used above it.



4541. Grubb, O. Feb. 23.

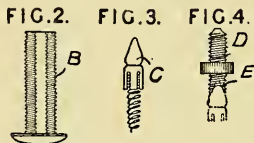
Saddles, riding. The panels *c*, detachable or otherwise, have padded extensions *c'* and are fixed beneath the flaps *a'* made of a single thickness

of leather, the flaps being independent of the extensions c^2 .



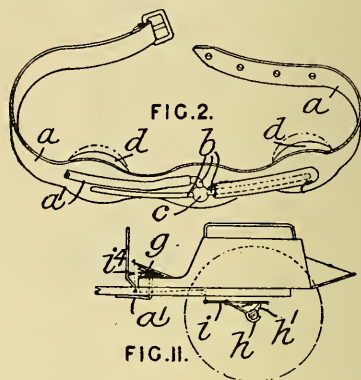
4595. Swan, B. J. Feb. 24.

Saddles.—In an inflating-valve for pneumatic saddles &c., wherein a spring-pressed plug valve C of rubber or other material engages a conical seat E, of the form described in Specification No. 16,832, A.D. 1893, the part D of the casing with the seat is made detachable from the remainder B of the



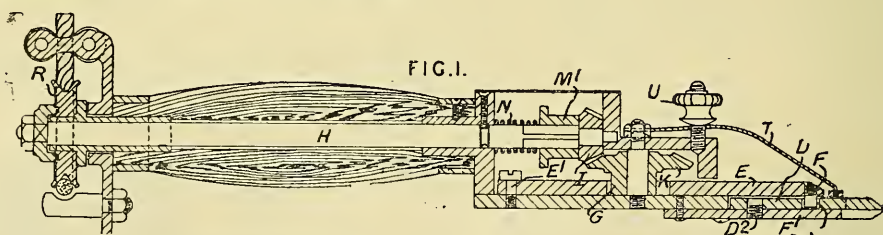
casing, to facilitate repairing and cleaning of the valve.

4602. Lateulere, A. A. Feb. 24.



Bridles; stopping and controlling runaway and restive horses.—A runaway or restive horse is controlled by obstructing its breathing by pneumatic pads d which press upon its nostrils. The pads are carried by the noseband a , and are supplied with air by tubes b, a^1 leading to an air bulb or bellows g arranged on the foot-rest for drivers or on the saddle for riders. The bellows g may be coupled by a chain i^1 to a lever i rocked by a projection h^1 on the wheel hub h . A small hole may be made at c or elsewhere to allow the pads d to gradually collapse automatically.

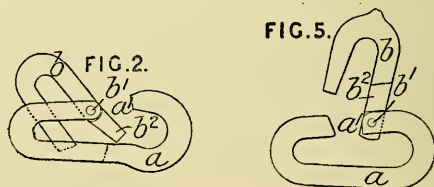
4681. Hume, W., [Bentham, E.]. Feb. 25.



Horse clippers and the like.—The upper cutter D in sheep clippers is pivoted at D^2 and actuated by the lever E, which is pivoted at E^1 , engages with the cutter by a pin F, and is actuated by a cam G. The cam is formed on the bevel-wheel K gearing with the loose bevel-wheel I, which can be coupled to the shaft H by a clutch M^1 actuated by a spring N and a cam or by a thumb catch. The shaft H may be arranged horizontally as shown, or at an angle to the plane of the cutters; it is driven by a flexible shaft or by a pulley R as shown. The tension is adjusted by the screw U and spring plate T.

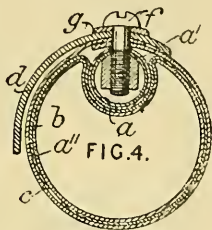
4765. Pybourn, T. Feb. 26.

Fastening hooks. The gap a^1 in the hook or link a is filled up by a piece b^2 formed on a V-piece b pivoted at b^1 and working in a slot in the plate a . The Figures show two modifications.

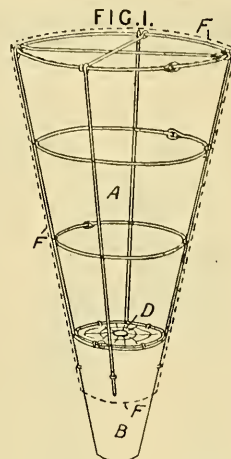


5000. Brundage, E. L. March 1.

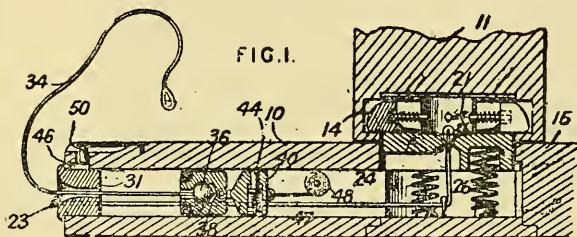
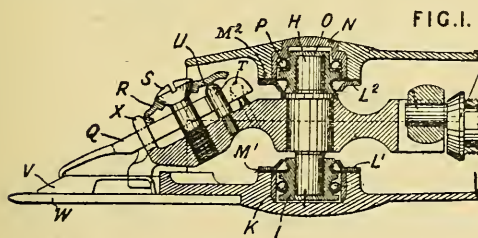
Collars, neck. — Fig. 4 shows a transverse section of one side of the collar. The inflated rubber pad *b* (used on each side of the collar) is held against the metal tube or frame *a* by a leather covering *c* connected to the frame by screws *f* which also pass through the metal draught-plates *g*, and preferably also shells *d* of papier mâché &c. The pad *b* is preferably cushioned by two layers of soft textile fabric *a'*, *a''*. A suitable inflating-valve is provided, the tube of which passes through the frame *a*. The collar may be hinged at the top and provided with a suitable catch at the bottom.

**5638. Ricketts, J. W.** March 8.

Ornaments for unspecified articles; bridles. — A wire frame *A* is fixed to a wooden plug *B* provided with a screw socket *D* for attachment to the horse's head. The frame is covered first with straw-board *F* and then with coloured skins.

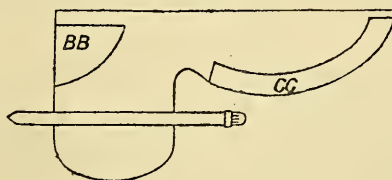
**5699. Peters, P. W.** March 8.

Saddles. — Relates to a safety detaching-device for automatically disconnecting the pommel when a lady rider is thrown. The pommel 11 is connected by spring bolts 14 to a piece 15 sliding vertically in the seat 10 against the action of springs 26. The bolts 14 are withdrawn and the piece 15 drawn into the seat by cords 21 connected to cords 23 fastened to the block 31 loosely fitted into the end of the channel 24. The block 31 is pulled out when the block 38 is pulled against it by the cord 34 attached to the rider. When the block 38 is pulled right out of the channel 24, its halves open out on a hinge and liberate the ball 36 on the cord 34. The block 40 connected to the block 38 cannot, however, be drawn right out of the channel, as the spring catch 44 engages with the recess 46. After the catch 44 has been pushed down by the pin 50, the blocks 38, 40 are pulled back again into the channel 24 by a spring or a cord 47 wound on a spring drum.

**6011. Newall, J. W.** March 11.

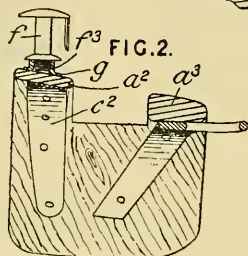
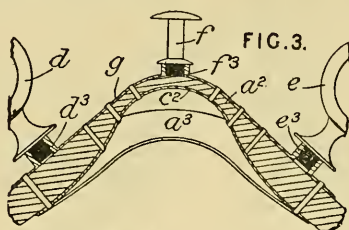
Horse clippers and the like. — The ends of the pivot pin *H* which is rigidly fixed to the lever take into bushes *I*, *O* separated from the bushes *K*, *N* of the frame by balls *P*. The bushes are kept in place by plates *L*¹, *L*² and flexible washers *M*¹, *M*² or packing-material to exclude all dirt from the ball bearings. The pin *H* can be separated from the bushes *I*, *O*, but does not turn in them when the machine is working. The cutter *V* is pressed

against the comb plate *W* by forks *Q* pivoted at *T*, guided in slots in the end *X* of the lever and pressed down by a plate *R* which bears upon the forks and the pins *U*. The plate *R* is pressed down by a screw *S*. In a modification, the tension is adjusted by pressing down the upper ball bearing by a screw &c.

6381. Cuthbert, E. G. March 16.

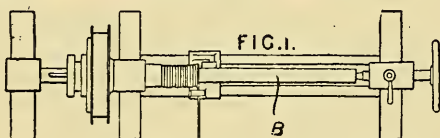
Saddles, numnahs for. The whole numnah, together with the pads *BB*, *CC* on its outer surface, is knitted or crocheted.

6556. Rathbone, F., Bates, S., and Miner, W. March 17.



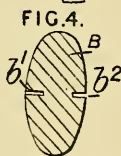
Saddles.—The wooden tree of gig and like saddles is made without the usual extended cantle, a single sheet of leather being sufficient to cover and extend across the parts a^2 , a^3 . The bearing-rein hook or post f , and also the terret rings d , e , if desired, instead of passing through the tree, screw into bosses d^3 , e^3 , f^3 in the metal plate or strip g riveted through the tree to the gullet plate c^2 .

6590. Bullows, W. L. March 18.



Terrets and like guide-rings.—Harness rings and the like are made from a rod, bar, or wire by coiling it on a suitably-shaped roll

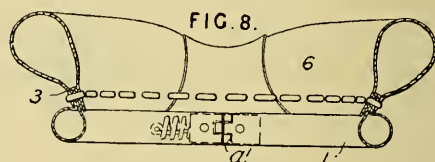
B while in a heated condition after leaving the reducing-rolls. A guide travelling on parallel rods assists in coiling the wire &c. The roll B has a notch b^2 , Fig. 4, so that the coil may be sawn into rings, the joints of which may be subsequently welded.



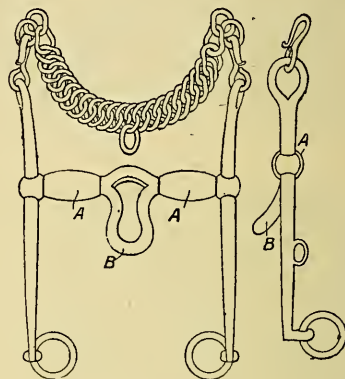
7009. Gulline, H. L. March 22.

Collars, neck.—The metal rim 1 is made in halves, each having a hollow body portion and a perforated flange 3 projecting tangentially from the body and formed by bending one edge of the metal forming the hollow part over the other edge. A spring hinge a^1 unites the two ends of the sections of the rim at the throat portion.

The main part of the collar 6 is laced or riveted to the flange 3.



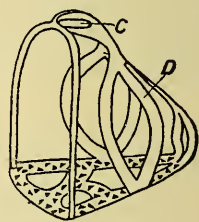
7417. Hopson, W. P., and Greeves, W. March 28.



Bits.—The mouth-bar of the bit for pulling and rearing horses has a port B of the form and in the position shown, and rollers at A, A.

7666. Christy, E. March 30.

Stirrups.—The eye C is made at right-angles to its usual position, so that the bow always hangs ready for the insertion of the foot. The foot is prevented from going too far through the bow by a cage D, net, or bag of metal, leather, string, or canvas.

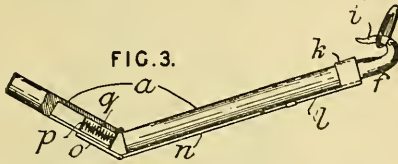
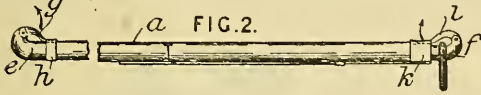


7801. Schmahl, K. April 1.

Halters; fastening.—Relates to a jointed hooked coupling-rod which enables the animal to free itself when its foot is thrown over the halter. The halter is connected to the manger or the like by a jointed rod a provided with hooks e , f with pivoted ends g , i retained in a closed position by sliding

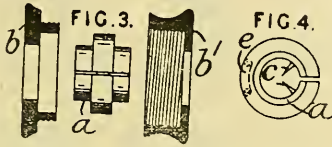


rings *h*, *k*. The ring *k* is connected by jointed rods *l*, *n*, *o* to an arm *p* bearing against a spiral spring *q*, and is drawn back when the rod *a* is



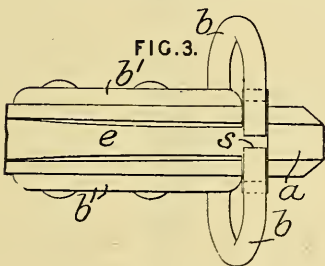
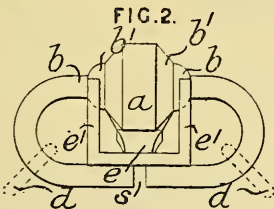
bent by the animal stepping over the halter. The ring *h* can be slipped back by hand to release the hook *g*.

7829. Woodcock, E. April 1.



Fastening halters. The leading rope is adjustably secured to the part going over the head by a flanged tubular clip *a* adapted to fit within the parts *b*, *b'* which screw together. The clip is in two parts hinged together at *e* and provided with teeth *c* to enter the rope.

8119. Williamson, W. O., and Williamson, J. G. April 5.

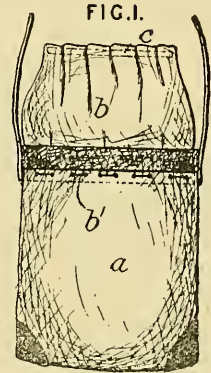


Fastening pole-chains and straps. Fig. 2 shows an end elevation, and Fig. 3 a plan of the underside of a pole end. When the spring *e*, which is attached to the pole *a*, is lifted, the chains or rings *d* can be passed through the gap *s* into the rings

formed by the hooks *b* bolted through their shanks *b'* to the sides of the pole. When the spring is released, it closes the gap, and its vertical sides *e'* confine the rings *d* to their respective hooks.

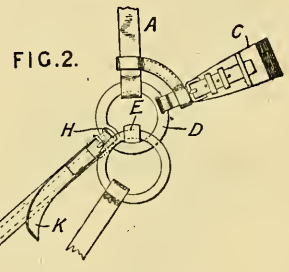
8126. Cooper, O. April 5.

Nosebags.—A flexible extension *b* of coarse canvas, fine netting, &c. is fixed to the top of the ordinary bag *a*, preferably by lacing *b'*. The mouth is contracted, so as to fit round the horse's nose to prevent waste, by means of a rubber ring *c*, coiled spring, or by lacing. The mouth may be hooked to the nose-band.



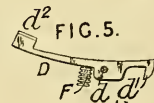
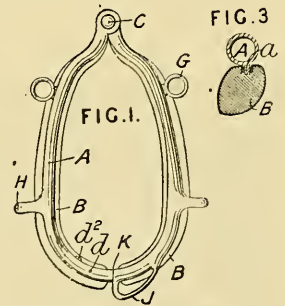
8376. Hannay, D. F. April 7.

Stopping runaway horses; bits; bridles.—A nose-band *C* is attached as shown to the cheek rings *D* and head straps *A*. An air cushion or pad or two separate pads are fitted inside the band so as to press when tightened on the animal's frontal bone or to close its nostrils. A running curb, which may be of rolled leather, is passed through holes *H* in the cheek rings and is attached to the extra rein *K*, which thus tightens both the curb and the nose-strap and with the usual snaffle *E* draws the bit back on the lower jaw.



8451. Spence, D. April 9.

Collars, neck; fastening; materials.—The hames *A* are of aluminium, preferably tubular, with a flange *a* for attaching them to the body *B* of the collar by sewing or lacing. The rein rings *G* and hame draughts *H* &c. may be lined with steel. The collar is hinged at the top with a rule joint *C*, and the leather of the body

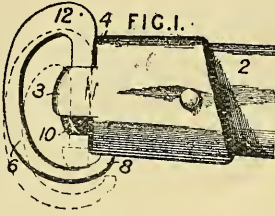


may be used to form a hinge. The eye or link J for the pole strap has the special form shown. A gap is left at K to prevent any pressure on the animal's windpipe. Figs. 5 and 6 show the hook fastening for the lower ends of the hames. The lever D is hinged at *d*, and has a push-piece *d*² pressed up by a spring F. The hooked end *d*¹ engages with the eye E on the other hame A.

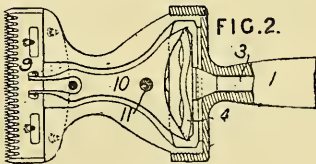
8573. Lack, F. E., Friedman, J. L., and Paxton, W. F. April 12.

Fastening traces.

Fig. 1 shows a plan of the fastening, the dotted lines showing the open position. The trace is fastened at 12 to the hook 6, the shank of which slides in a notch at 4 and beneath a cross-bar 3 and terminates in a T-head 10 resting against the cross-bar, which is formed in a piece with the ferrule 1 firmly fixed to the whipple-tree 2. The point 8 of the hook enters a recess in the rear of the ferrule.



8738. Wikström, M. April 14.

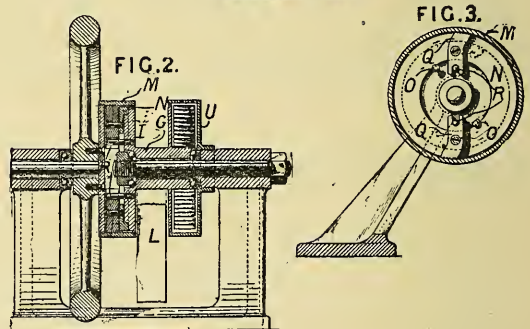


Horse clippers and the like.—The upper cutter 9 is actuated by a lever 10 pivoted at 11 and formed with a forked end to engage as shown with a disc 4 or truncated cone with projections or an undulating rim. The disc is fixed to a rotary shaft 3 in the handle 1.

8739. Wikström, M. April 14.

Horse clippers and the like.—Fig. 1 shows a treadle-driving gear applied to driving shearing-appliances, the apparatus for converting the reciprocating movements of the treadle into rotary motion being strapped on the shearer's back. It may, however, be carried about the level of his shoulder, by a bracket or support resting on, or embedded in, the ground. The forward end of the treadle-lever rests on the ground, and near the latter is a foot-hold provided with a toe-strap. The rear end of the lever is connected to a strap L wrapped round a pulley G, Figs. 2 and 3. To one end of this pulley is attached a spring contained in a casing U,

while the other is provided with a flange I, to which is secured a ring N by bolts O, O. Ratchet levers Q, Q pivoted to this ring are forked at their inner ends to embrace studs R projecting from

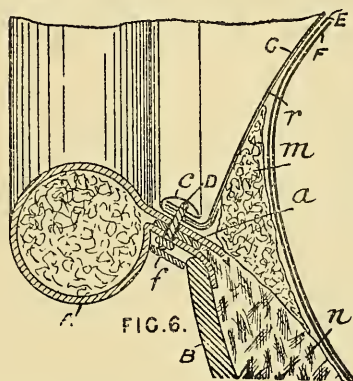


the flange I. Thus, when the pulley G is rotated in the direction of the arrow, Fig. 3, the pawls Q grip the flange M and rotate it and the flywheel and flexible shaft B. When the spring rotates the pulley in the other direction, the pawls move out of engagement with the flange M. For convenience of carriage, the treadle-lever may be made to fold in the middle.

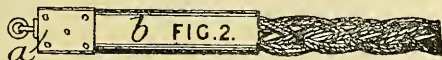
8879. Fry, J., and Barnes, J. W. April 16.

Collars, neck; lining and padding.—Relates to pneumatic horse-collars. Fig. 6 shows a section across the forewale A and part of the afterwale B. Two separate inflated rubber bags F, one for each side of collar, are enclosed in laced leather bags E,

which in turn are held in place against the backing *n* and felt &c. filling *m* by a lining *C*, which may be backed by canvas *r*. A separate lining may be used for each side of the collar, or a single piece may be used constricted by a leather band at the top and bottom of the collar to remove any pressure from the windpipe and the back of the neck. The lining *C* is laced to the edges of the leather covering *A* of the forewale, the edges being strengthened by a leather strap *a*. The lace *D* is formed with loops which pass through holes in the neck of the forewale and loop together successively. The lacing is covered on one side by a strap *f*, and on the other by a flap *c* sewn to the edge of the lining and passing round as shown.



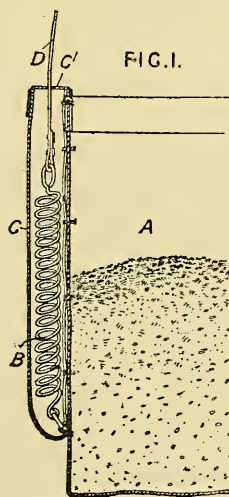
8938. Thomas, A. G. April 18.



Traces.—Traces are made from flexible strands of wire braided or twisted together to form a round rope or a flat tape. Several braided strands may be bound together by a wire binding or covering. Suitable attachments for the hame &c. and vehicle are provided as shown at *a*, and the trace is covered with leather *b*. The Provisional Specification states that the trace may be made of a flexible steel wire covered with leather, rubber, canvas, &c.

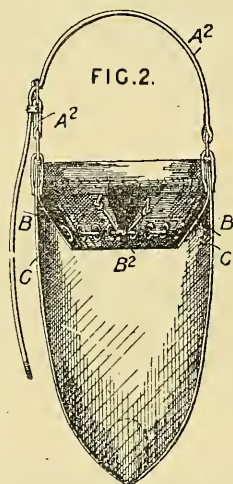
9140. Daws, G. April 20.

Nosebags.—The food is always kept up to the animal's mouth by employing springs *B* which draw up the bottom of the bag *A* as the food is consumed. The springs are protected by casings *C* with a cap *C'*, and are attached one on each side to the suspending-strap *D*. The Provisional Specification states that there may be one pair of suspending-springs and another pair to pull the bag together concertina fashion.



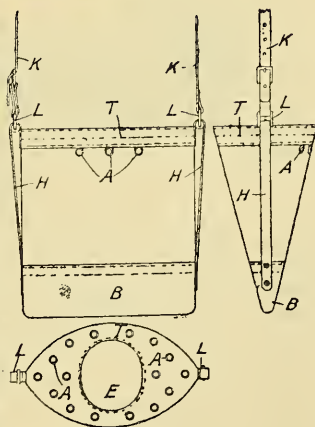
9186. Perkins, T. C. April 20.

Nose bags.—A tubular piece *B* is sewn into the mouth of the bag to form a recess *C* into which the food may drop if the bag is tossed up by the animal. The piece *B* fits round the animal's nose and may be provided with a draw-string *B'*. The suspending-strap *A*² is attached to points midway between the seams of the bag. The corners of the bag may be rounded.

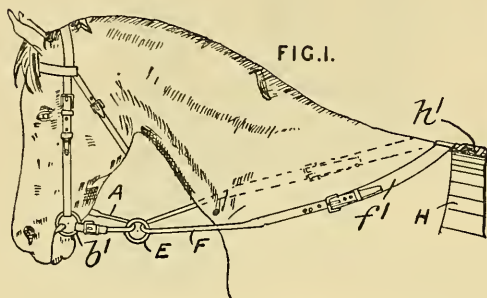


9300. Stevens, H. B. April 22.

Nosebags.—The head strap *K* is connected to the bag by roller loops *L* and straps *H* riveted to the top and bottom of the bag, so that, as the top falls, the bottom rises and brings the food into a more convenient position. The bag has a double bottom *B* and a canvas top *T* with an oval opening *E* for the animal's nose. Perforations are made at *A* for ventilation.



9363. Farn, W., and Clarke, T. U.
April 23.



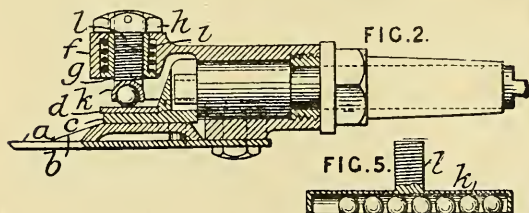
Bridles; horse breaking and training harness.—Relates to reins for breaking-in purposes, which may also be used as bearing-reins. The bit rings b^1 are connected by a rein A which is loosely connected by a ring E to the reins F secured to the roller H or harness, saddle, &c. The part f^1 may be elastic. A strap h^1 may connect the part f^1 to the crupper strap.

9507. Gulline, H. L. April 25

Collars, neck.—The rim or forewale of the collar is made of a single metallic tube a with a closed flange b , the metal being of sufficient resiliency for the two ends at the top of the collar to be sprung apart to admit the horse's neck.



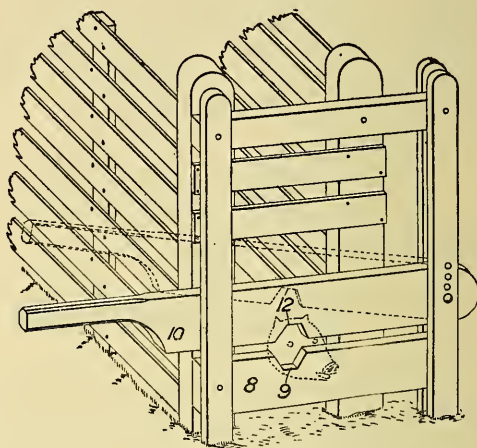
9608. Barton, W. W., and Barton, A. T.,
[trading as Barton Bros.]. April 26.



Horse clippers and the like.—Relates to anti-friction devices for use where one part slides on another with considerable pressure, such as the cutter on the comb plate of a horse clipper, sheep shear, &c. Fig. 2 shows a horse clipper with cutter b and comb plate a . The steel plate d on the part c riveted to the cutter bears against a number of balls, rollers, rockers, &c. in a troughed piece h with a threaded stem l which engages with a threaded sleeve g . This sleeve works in an abutment piece f , and is pressed down by a spring i .

until the fixed nut h bears against the piece f . On turning the sleeve g by means of the nut, the pressure of the balls can be varied.

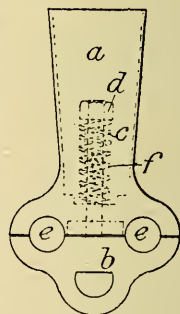
9884. Harrelson, J. W. April 29.



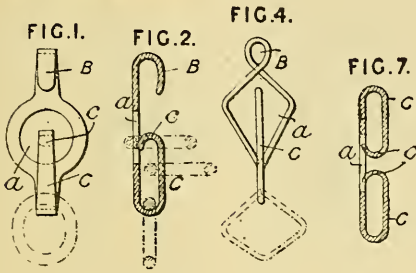
Animals, stocks for holding.—Relates to the construction of a stock for holding pigs by the head while being 'ringed.' A framework is erected at the end of a narrow railed passage, and supports a cross-bar 8 with notch 9 and a pivoted lever 10 with corresponding notch 12. The animal's head is held in the notches as indicated in dotted lines, and, when the rings have been inserted, the lever 10 is raised and the pig driven over the cross-bar 8.

- 10,015. Felton, B., and Law, B. C.
May 2.

Fastening pole-chains and straps. The pole end is fitted with a hollow cap a which receives a sliding piece b having a spindle c carrying a nut d and surrounded by a spring f . The end rings of the pole-chains may be passed through the holes e formed partly in the cap a and partly in the piece b . Should a horse fall, the pole-chains may be released by pulling the slide b , which is afterwards returned by the spring f .



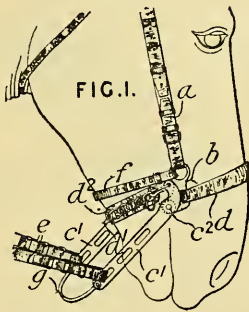
10,298. Swales, F. May 5.



Fastening.—The hook, which is particularly adapted for use as a curb-chain hook, has a loop or hook B at the top for connection to the bridle or other article. The body of the hook is flat, with a central aperture *a* into which projects the point *c* of the hook C. The method of placing a link on the hook C is shown in Fig. 2. The hook C, instead of being bent over at the end *c*, as shown, may terminate in an enlargement. A spring tongue may be provided extending across the aperture *a* in the body of the hook. Fig. 4 shows the hook made from wire, and Fig. 7 shows a double hook which may be used as a connecting-link.

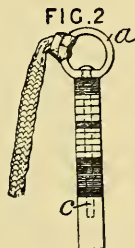
10,698. Wethered, E. R. May 10.

Bridles.—Relates to improvements in the bitless bridle described in Specification No. 25,066, A.D. 1896. The noseband *d* is connected to fulcrum plates *b* kept in place by the cheek straps *a* and strap *f*. The curb chain *d'*, with band *d''*, is attached to the short ends of the levers *c'*, which are pivoted at *c''* to the plates *b* and are connected together by the bar *g*. The reins *e* are attached as shown, and a second pair may be attached to the levers nearer their fulcrums.

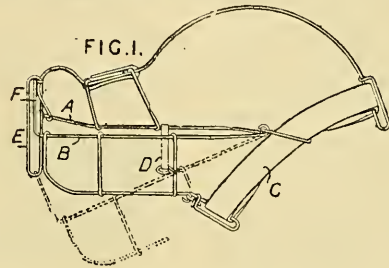


10,795. Dunckley, A., and Blackett, F. J. May 11.

Whips.—A loop *a* is pivoted axially at the end of the handle. The loop may be attached by a length of wire *c* or by the central wire core where such exists.

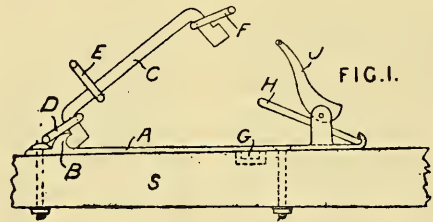


11,040. Caldbeck, E. J., Scott, F. S. D., and Hastings, R. May 14.



Muzzles for animals.—The object is to enable a dog &c. to yawn but not to bite. The muzzle is in two parts A, B jointed near the neck straps C and normally kept together by a spring such as D, but capable of being separated as shown by the dotted lines. The parts A, B carry in front a loop or loops E, F, or a tube telescoping upon a bar and enclosing a spiral spring. The loops &c. form an obstruction to prevent biting.

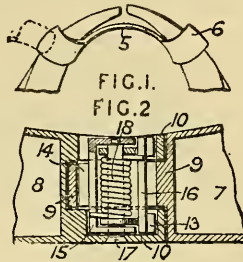
11,454. Grimmer, R. May 20.



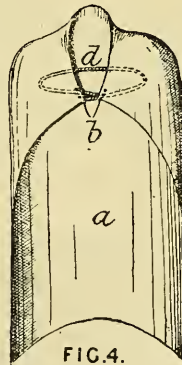
Fastening.—Relates to fastenings for connecting harness to vehicles and vehicles to one another. Fig. 1 shows a fastening for connecting the traces, backband, and breeching to the shaft S. The harness is attached to rings D, E, F on a staple C one end of which is secured by the overhanging lug B while the other end is retained in the socket G by a spring plate H held down by a pivoted cam lever J. To release the animal, e.g. in the case of a fall, the lever J is operated and the staple C becomes entirely freed, remaining connected to the harness. The rings D, E, F may be removed from the staple by turning them sideways. For coupling vehicles the link D is attached to a chain on the leading vehicle, and the parts B, H, J and base-plate A are carried by a T-shaped bar connected to the draw-bar of the other vehicle. Instead of the plate H a screw or a spiral spring may be used to secure the right end of the staple, which may be arranged in a horizontal plane.

12,554. Fairweather, W., [*Fessenden, J. C.*].
June 4.

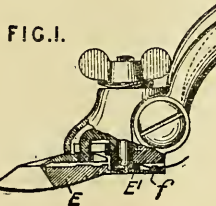
Collars, neck.—The collar, open at the top, is fitted with a spring hinge at the bottom. If an ordinary collar breaks, it may be converted into a hinged collar by fitting on the spring hinge. Fig. 2 shows a section of the form of hinge preferred. The plates 7, 8, shaped to fit the collar to which they are held by covering-plates serving as stops, have tongues 9, 10 which fit together as shown. Notches in these tongues are engaged by lugs 13, 14 on the pieces 15, 16 which turn upon the hinge pin 17 against the action of the spring 18. The top ends of the collar are preferably held together by a steel spring 5, Fig. 1, secured to one side and having a clasp 6 to engage the other side.

**12,719. Stohwasser, F. J., and Winter, G. B.** June 7.

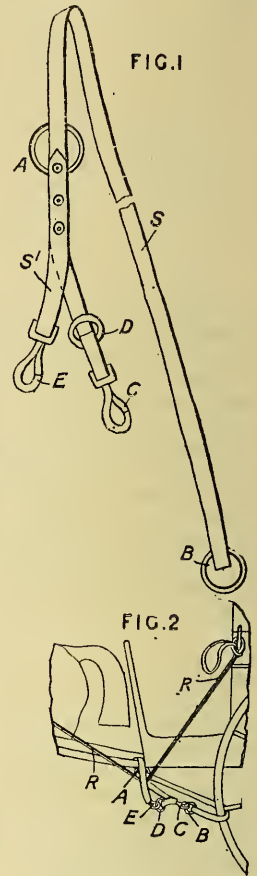
Clothing for animals.
—A blanket or wrapper for military and other purposes consists of a square cloth *a* with eyelets or fastenings at the two corners *b*, to which is fastened a cord or strap *d* in such a manner that the blanket or wrapper can be readily used as a cloak or cape. The blanket may also be used as a horsecloth or the like, and may be waterproof.

**12,771. Hasch, C.** June 7.

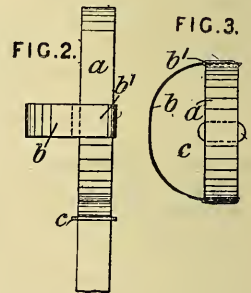
Horse clippers and the like.—The lower cutting-blade *E* is made readily removable, so that cutting-blades of different thickness may be interchanged for cutting the hair to different lengths. The part *E'* slides in between dovetails and is secured by a spring pin *f*.

**12,976. Holland, F.** June 10.

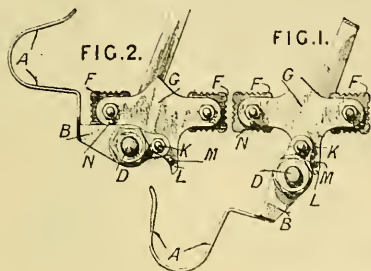
Stopping and controlling runaway and restive horses.—Fig. 1 shows the device detached, and Fig. 2 in its operative position. A strap *S* has at one end the ring *B*, which can be passed through the ring *A* attached to the back of the strap near the other end, which is fitted with the spring hook *C* and ring *D*. A short strap *S'* is riveted to the strap *S*, and terminates in the spring hook *E*. When the driver wishes to leave the vehicle unattended, he fastens the reins *R* to it, and the strap *S* being previously secured to the shaft, he passes the ring *B* round the wheel felloe between two spokes and attaches it to the hook *C*. The reins are then drawn down near the shaft, and encircled by the loop formed by attaching the hook *E* to the ring *D*. Any motion of the horse will cause the wheel to move slightly and produce tension in the reins.

**13,250. Bishop, A. E.** June 14.

Halters.—The halter consists of the looped headband *a* and the noseband *b* adjustably connected to it by loops *b'*. These bands are preferably of webbing. The adjustable loop *c* is preferably of leather. The usual rope is attached to the ends of the band *a*. The halter may be used as a bridle by passing the band *a* through the bit rings.

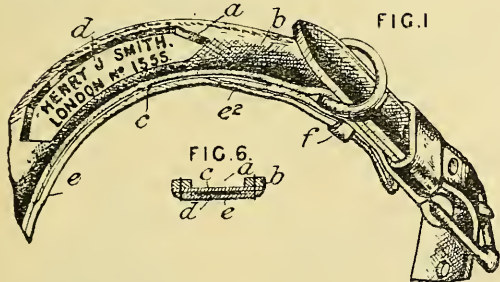


13,368. Miall, E., [*Bedell, H. G.*]. June 15.



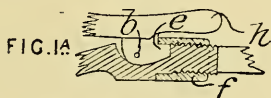
Stirrups.—Relates to pedals and toe-clips for cycles, sewing-machines, &c., which are so arranged that the pressure on the pedal causes the toe-clip to be brought into position. The invention is stated to be applicable to stirrups. The clip A is connected to a forked frame B, which is mounted on the pedal pin D, the pedal F being connected by bolts K to the rear end of the frame B. The end plates G may be extended downwards as at L, so as to raise the pedal clear of the pedal pin. Stops N, M limit the movement of the parts. When not in use, the clip hangs in the position shown in Fig. 1, but pressure on the pedal lifts it into the position shown in Fig. 2.

14,013. Power, D., [*trading as Power & Sons, D.*]. June 24.



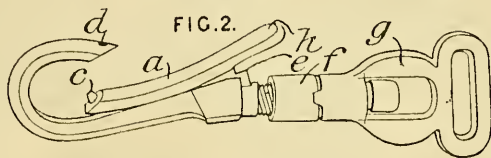
Dog collars.—An address card or label &c. d is held behind an opening a in the collar b by a strap e which is sewn along its edges to the collar strap except at the part e², which may be turned back to introduce the label and is normally held flat by a loop f. A transparent plate c of talc &c. is sewn behind the opening a to protect the label.

14,019. Palmer, S. June 24.



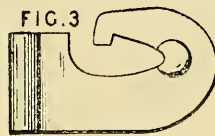
Fastening.—Relates to hooks for harness, reins, leaders, &c. The tongue a is hinged in its centre, and provided with a pin c to enter a hole d in the point of the hook. The tongue is closed by pressing down the end h, and then screwing forward

the collar f until it engages with the notched lug e. The collar is rotated by the swivel g, which has a projection for engaging a notch in the collar.



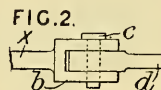
14,066. Carder, J. W., and Carder, S. J. June 25.

Fastening.—Hooks for hames &c. when worn at the bend are repaired by inserting a rivet as shown. The Provisional Specification states that the repair may be effected by a steel spring provided with a thickened part to take the wear and held in place by side flanges.



14,366. Patrick, T. June 29.

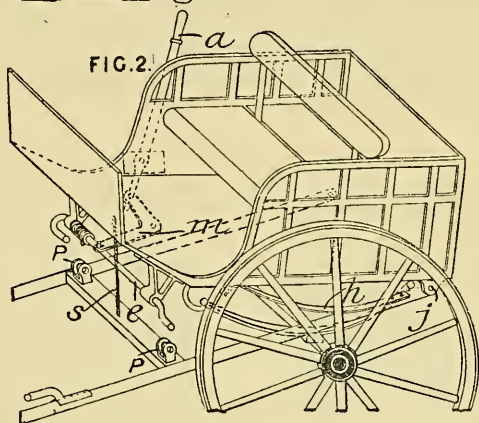
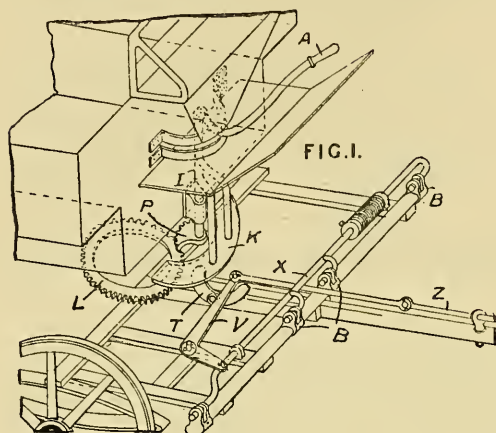
Fastening traces. The trace hook carries a plate d which fits into a socket b attached to the vehicle. The pin c, of square or other cross-section, fits into corresponding holes in the plate and socket. Should a horse fall, the trace hook is released by knocking the pin out.



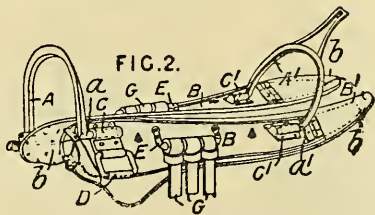
14,982. Buskirk, S. van. July 7.

Bridles; bits; materials.—The bars a, a forming the bit, of plaited raw hide or metal covered with rubber, but preferably steel bars, are connected at one end to a strap b passing over the animal's head and at the other end by rings e to the reins f after passing through the rings d of the cheek straps c. A pull on the reins compresses the jaw laterally.



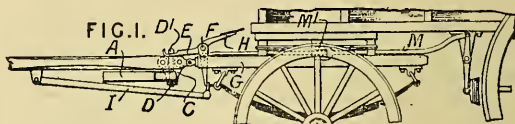
15,143. Hutchison, W. July 9.

Runaway horses, releasing; fastening.—The traces are held in the jaws B, Fig. 1, or P, Fig. 2, by draw-bolts on the rod X, e, which is operated by a bell-crank lever and suitable connections from the handle A. A rod Z actuates a bolt which frees a cap to which the pole-chains are attached.

16,377. Templer, G. F., [Elliott, E. L.]. July 27.

Saddles, riding. Relates to military &c. saddles which may be readily taken to pieces or repaired without skilled labour. The steel side bars B, with hinged ends B' and padded at b, are united

by steel &c. arches A, A' with cylindrical feet a, a' turning freely in sockets C, C' fixed to the side bars. The feet are kept in the sockets by the tension of the leather seat, which is stretched across the arches A, A' and united thereto by buckled straps. Loops D, E for the stirrup leathers and girths G respectively are arranged in the position shown. The flaps are suitably suspended from the side bars.

16,718. Woolley, J. A. Aug. 2.

Fastening.—The object is rapidly to release runaway or fallen horses from vehicles. The traces, as well as the breeching and pole-chains where used, are fastened by draw-bolts readily operated by the driver from his seat. In Fig. 1, the traces A are attached by bolts D, D' sliding through the shafts and brackets C. The bolts have T-heads engaging with the forked levers E fixed to a rock shaft F provided with a hand-lever or treadle H. The bolts may be operated separately by hand without moving the rock shaft. A rest-bar I may be released, and the brake rod M hinged at M' may be actuated by arms fixed to the rock shaft F, which may be carried by the underframing G as shown or by the shafts.

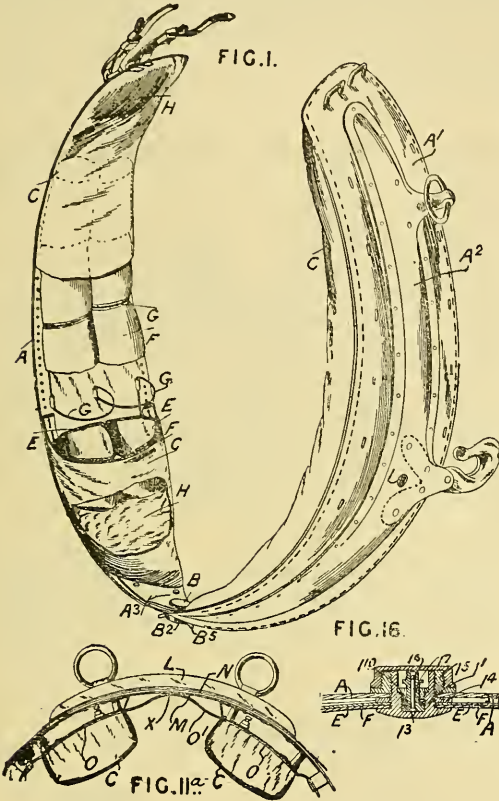
17,106. Rutter, G. Aug. 9.

Twitches.—Two rods a, with handles d and preferably grooved, are linked together at the upper end and provided with a strap e &c. for tightening the appliance upon the animal's nose.

**17,417. Ford, L. P. Aug. 12.**

Collars, neck and breast; saddles; lining and padding; pads for; valves for pneumatic harness and saddlery.—Relates mainly to pneumatic harness and saddlery. Fig. 1 shows a horse-collar which consists of metal plates A, A' strengthened by plates A² and padded with flock at H and elsewhere with inflated rubber pads E which are held in place by wires or laces &c. G and are protected by a cover C attached to the plates A, A' by lacing or by studs in keyhole slots. The pads E are enclosed in a cover F, and on the side towards the

animal may be strengthened by a strip of leather &c. (not shown). The cover F is preferably made of a material impermeable to moisture and inelastic, and is preferably formed with constrictions for

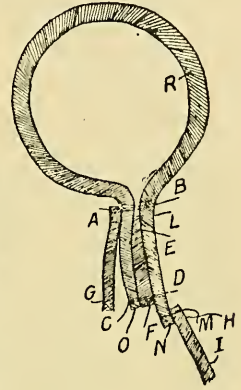


the wire G laced through the plates A, A¹ as shown. The plates A, A¹, A² strengthened by plates A³ are hinged at B, the axis of the hinge pin being inclined to the line bisecting the collar longitudinally. The valve is preferably placed at I beneath the strengthening-plate A². Two or more pads E, each going round the collar, or two or more independent pads on each side, may be employed. Pads other than pneumatic may be used. The plates A² may be replaced by a bead or groove made in the plates A, A¹. A front cover may be attached to the lining C. The nut B² has arms B⁵, or these may be extended to form a kidney-link for the pole-chain. Fig. 16 shows the valve, which consists of a body I¹, perforated at I³, screw-threaded externally for the nuts I⁵, I⁴ securing the plate A and pad E, F respectively and screw-threaded internally for the sleeve I⁷ and the gland I¹⁰. The sleeve I⁷ carries the valve spindle I⁶. Light harness saddles may be made similarly to the collar shown in Fig. 1, but the metal plates supporting the pads are covered with thick leather plates. Fig. 11^a shows a harness saddle for heavy work in which the pads are attached to metal plates O supported on a metal frame M and connected together by metal plates O¹, to which and

to the frame M the metal trough L for the back-chain is fixed. A light waterproof cover N is stitched &c. to the frame M. A pad (not shown) is placed at X to protect the animal should the pads at C collapse. Breast collars are made in a similar way to the collar shown in Fig. 1, or square detached pads backed by metal plates are riveted at intervals along the breast strap.

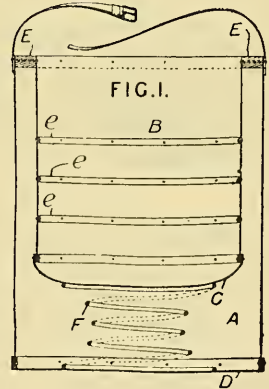
17,519. Allen, A. Aug. 13.

Collars, neck.—A broad bearing for the hames is formed by lengthening the back barge L N of the forewale R, stitching it at M to the afterwale H I, and stitching it to the front barge A O by two rows of stitching A B, C D. A piece of leather E F is introduced to give firmness. Only one row of stitches passes through the body side A G of basil &c. and thus becomes visible, a considerable free width A C of front barge being thus left. The two rows of stitching run together at the top of the collar. The back barge is slit or nicked to give more play to this part.



17,560. Baldwin, H. Aug. 15.

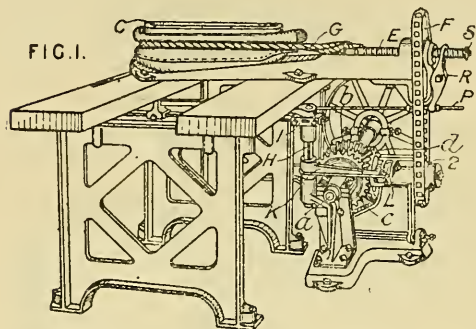
Nosebags.—The food is contained in a bag B suspended within an outer bag A, to which it is riveted through a stiff leather ring E. The bags are of canvas with bottoms C, D of tin plate &c. A spring F raises the bag B as the food is consumed, the canvas folding between the steel &c. rings e. Ventilating-holes may be made in the outer bag.



17,655. Lake, H. H., [Ross, S.]. Aug. 16.

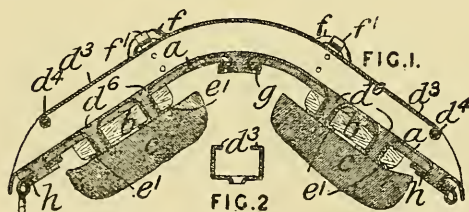
Collars, neck.—Relates to machines for shaping horse-collars by straining a cord G round them while they are supported on a block C. The machine instantaneously stops when the cord is sufficiently tight; the machine is afterwards

reversed, and again stops automatically. The cord G is tightened by a bolt E which screws through a rotating nut F geared to a wheel 2 on a shaft carrying a bevel-wheel d. The wheel d may be



put into gear with either of the constantly-rotating bevel-wheels b, c on the main shaft a, which may be prolonged to actuate several machines. The wheel d is shifted by the link L and the lever K on the rock shaft H, to which is also secured the lever I. The wheel d is frictionally mounted on its shaft, so that, when the strain on the collar reaches a certain amount, its shaft ceases to turn and drive the machine. On reversing the lever I, the nut F is reversed and the screw E travels towards the collar till the head s strikes the tripping-lever R, actuating the rod P and releasing the lever I from a catch, thus stopping the machine.

17,664. Liggins, E. Aug. 16.



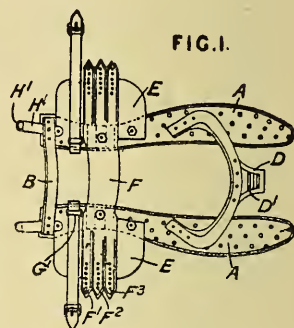
Saddles.—Relates to metal troughs for the backbands or chains of harness saddles. The trough, as shown in longitudinal and transverse sections in Figs. 1 and 2 respectively, has overhanging flanges d', d'' to prevent the chain &c. from escaping. The

trough is fixed in place by screws d' passing through flanged holes in the trough and through the body a and screwing into long tubular flanged nuts e' let into the blocks b to which the pads c are secured. Similar bolts and nuts are employed to fix the crupper strap g and girth loops h. The rein rings f are secured by metal straps f' riveted to one side of the trough. Rollers may be arranged at d'.

17,766. Gleadowe-Newcomen, A. H. Aug. 17.

Saddles, cavalry.

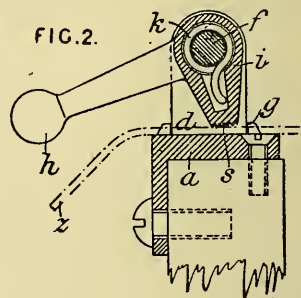
The tree consists of the side bars A to which are riveted a front arch B and rear arch, both of steel of L-section. The bars A are of sheet steel or aluminium with beaded edges and perforated or plain. The girth straps F', F'', F''' are in one with a broad leather strap F which, like the stirrup-strap loops G' and leather flaps E, are riveted to the side bars. Loops and bars for straps are provided at H' and D' on metal pieces H and D riveted in place.



17,902. Masurath, E. Aug. 19.

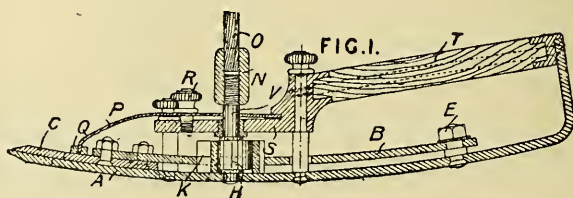
Rein-holders.—

The holder i, mounted loosely upon the bolt f, which is rigidly fixed to the framing a, d, has a handle h and a roughened surface s, which is normally pressed against the rein z by the free end i of the spring k attached to the bolt f.



17,982. Hume, W. Aug. 20.

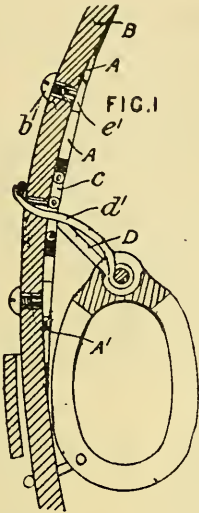
Horse clippers and the like.—The comb plate A, cutter C, and actuating-lever B are all curved so that the clipper may be more effective in reaching the curved parts of the sheep &c. being clipped. The lever B is actuated by a flexible shaft O arranged in the position shown. The shaft is attached to a spindle V carrying a cam H or crank-pin working in



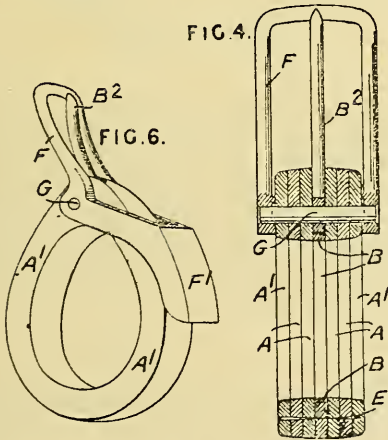
a slide K placed in a slot in the lever which is pivoted at E. The tension is adjusted by a nut R which acts on the spring P bearing on the bar Q. The handle T may be arranged as shown or fixed only at one end, the comb plate A ending at the point E. The parts O, N, V may be encased in sleeves to keep the wool from getting entangled. A modified form of frame S is described.

18,199. **Eaton, W. H., and Capewell, W. G.** Aug. 24.

Backbands; traces; fastening.—The backband B or trace is strengthened by plates A, A' connected together by hinged pieces c between which passes the tongue D of the buckle d'. The plates A, A' are slotted for the heads e' of nuts for the fixing-screws b', which pass through the buckle holes. If the strap breaks, the buckle is supported by the hinged pieces c. Traces may be strengthened by plates without any hinge joint.



18,222. **MacLachlan, A. L.** Aug. 24.

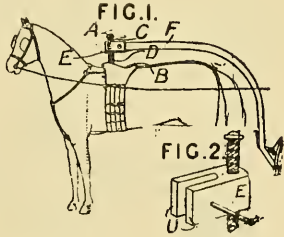


Tugs, shaft.—The tug is made up of a number of flat leather rings A, A', B nailed &c. together. The outer rings A' may be attached by rivets or by double-ended nails E to give a better effect. The buckle F is attached by a rivet G or bolt, and the tongue B² works in a slot in the central leather ring B. The backband loop may be of leather or

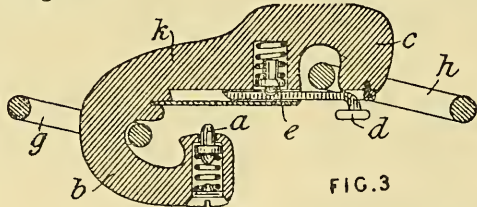
metal riveted in place, or may form part of the buckle as shown at F¹.

18,245. **Stebbing, G. F.** Aug. 25.

Harnessing, systems of.—The shaft F, curved as shown and rigidly secured to the vehicle, is attached by means of a coupling E to a pillar A secured to the saddle B. The coupling E, which is between springs C, D to allow of the movements of the horse, consists of a block, Fig. 2, the checks U of which, between which a tongue on the end of the shaft is pivoted, are made deep so that the vehicle is held upright. The pillar A is on the forward part of the saddle, to bring the pressure of the draught on to the horse's back.



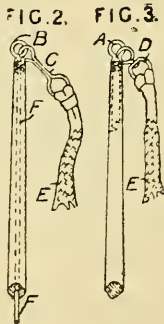
18,347. **Grayn, E. I., and Mathias, S.** Aug. 26.



Fastening.—Relates to hooks for fastening traces and pole-chains. The links g, h engage respectively with the hooked ends b, c of the piece k, which is so shaped that, when the parts are in tension, the links exert no pressure upon the spring locking-bolt a or the slide d held in position by the bolt e. The slide d may therefore be readily pressed back, and the link h twisted out of engagement with the hook c while the parts are in tension. The hook c may be closed by a spring bolt similar to the bolt a.

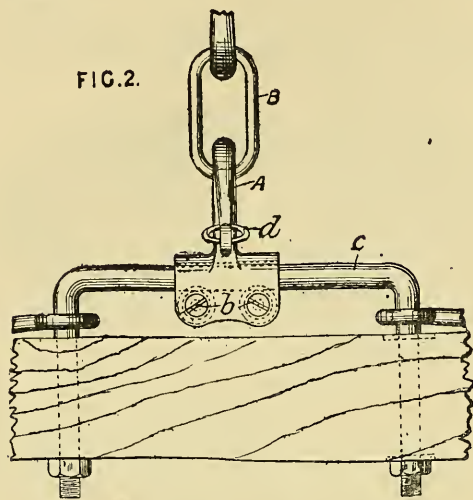
18,494. **Doe, J. R.,** [trading as Doe & Sons, P.]. Aug. 29.

Whips.—A metal eye A, B is formed on the end of the steel core F of the whip stock, or is attached separately by prongs as shown in Fig. 3. A leather or metal link C or swivel D is connected to the eye A, B and to the whip thong E, which has thus a freer play.



18,501. Mellings, J., and Wells, H. H.
Aug. 29.

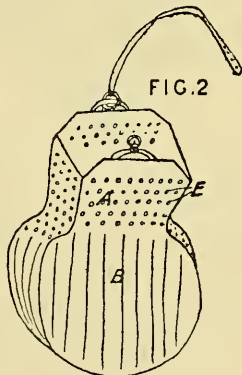
FIG. 2.



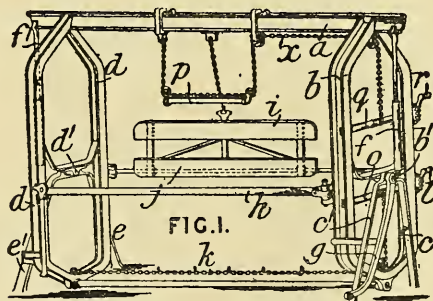
Fastening backbands. The hook A, which connects the ridge-chain or backband B to the ridge-bar C, has rollers *b* which run on the ridge-bar, and the backband is prevented from getting detached by the ring *d*.

18,593. Bielefeld, J. M.
Aug. 30.

Nosebags.—The bag has a constricted neck A widening at the top, and the bottom part B to contain the food is of circular, semicircular, or flat form. Holes E are made for ventilation.



18,802. Vinsot, E. A. Sept. 2.

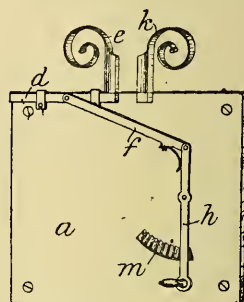


Animals, stocks for holding.—Relates to stocks for holding horses during surgical operations.

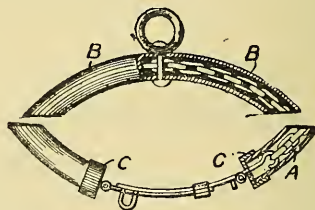
The apparatus consists of a revolving frame *a, b, d* pivoted at *b', d'* to fixed legs *c, c', e, e'*. The apparatus is turned by handle *f, f', g* so as to bring the horse from a vertical to a horizontal position, resting upon the padded table *i, j* carried by the frame. The horse is kept in position by a bar *h*, chain *k*, and hooked bar *p* operated by chain *x*. The chains *k, x* are tightened respectively by rollers *q, o* operated by winch handles *r, l*.

19,441. Kaun, O. Sept. 13.

Rein - holders.—The reins are gripped between the fixed jaw *k* and the movable jaw *e* carried by the sliding bar *d* actuated by the hand-lever *h* and link *f*. A rack *m* keeps the lever in position. All the parts are carried by a plate *a* fixed to the vehicle.



19,653. Wood, J. R. Sept. 16.

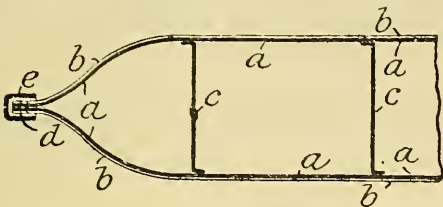


Dog collars.—The collar consists of a chain A, wire, or wire cord encased in a flexible tube of rubber &c. B. The ends of the chain may protrude through caps C, C, and be fastened by a padlock &c., or the sliding fastening shown in the Figure may be used. One end of the collar may have a small chain, so that the same collar may be made to fit dogs of different sizes and the license badge may be secured to this chain.

19,689. Smith, G. G., and Stuart, M.
Sept. 16.

Saddles.—Relates to the manufacture of waterproof and airproof articles such as air cushions, saddles, &c. The body of the article is made up of textile fabric *a*, the parts being sewn or otherwise joined. The whole article is then coated with rubber, which closes the pores in the fabric and also the holes formed by the stitches &c. The

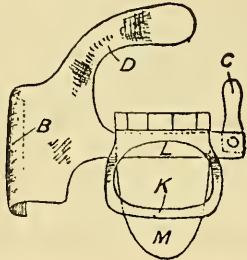
article may be strengthened by strips or diaphragms *c*. Where the edges of fabric meet, as at *d*, a



strip *e* of proofed fabric may be solutioned over them.

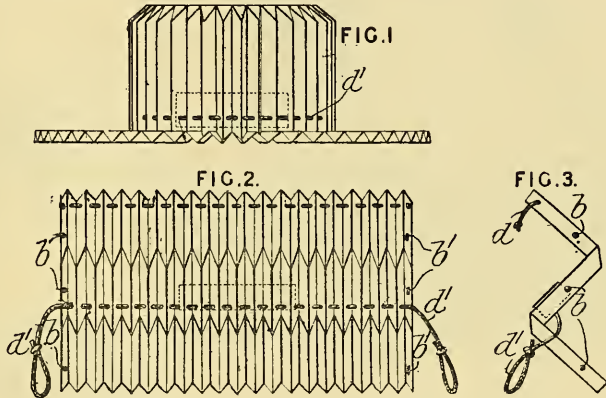
19,919. Orpwood, W. L. Sept 20.

Stirrup straps, suspending. — The stirrup strap is attached to the loop *K* hinged to the plate *M* and bent so as to fit the bar *L*, provided with the spring catch *C*. The bar is bent round at *B* and bowed out at *D* to fit the saddle-tree.



20,045. Anderson, M. R. M. Sept. 21.

Sun and weather screens.— Hats and other head coverings are made from folded, crimped, waved, or corrugated materials, and the Provisional Specification states that such head coverings may be worn by horses and other animals. Fig. 2 shows a length of accordion-pleated material provided with fastenings *b*, *b'* and draw-strings *d*, *d'* by which it is formed into a hat of the shape shown in Fig. 1. Fig. 3 shows the hat unmade, and the pleats folded together for convenience of transport. Various shapes of head coverings may be made from this material.

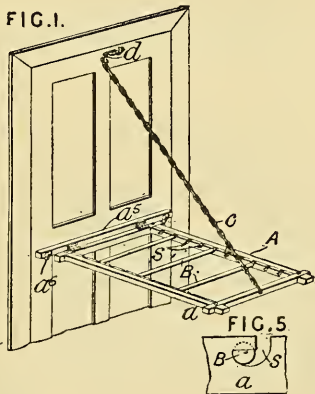


20,331. Wilson, E. Sept. 26.

Collars, neck.—The collar is strengthened by steel &c. plate *d* placed immediately beneath the leather covering of the afterwale *b*. The plate is of *A* form, and of curved section. The Provisional Specification states that the plate may encircle the collar, and may partly or wholly encircle the forewale *c*.



suspending horse blankets and other articles. It consists of a rectangular frame *A*, Fig. 1, which is



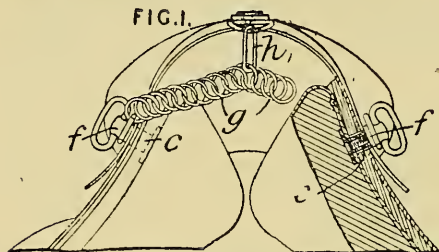
20,911. Norris, R. Oct. 4.

Brackets and stands for.—Relates to a rack which may be fixed to a door or elsewhere and serves for

hinged at one end to a bar *a*⁵ in which are thumb-screws *a*⁶ by which it is fixed to a door. In the

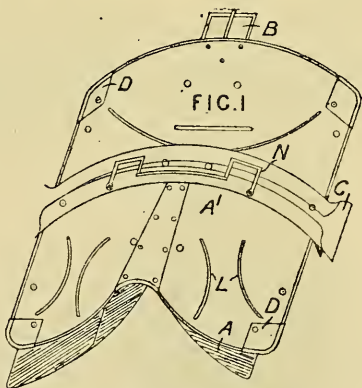
side bars *a* of the frame are a number of slots *s*, shown separately in Fig. 5, and the ends of the cross-bars are so shaped that they can be readily passed into the slots and are held securely therein without slipping. The articles are placed over the bars *B* while the frame is in the horizontal position shown in Fig. 1, and it is then raised to a vertical position by engaging another loop of the chain *c* with the hook *d*. The appliance can be easily taken apart when it is required to be packed up.

20,939. **Martin, P. A.** Oct. 5.

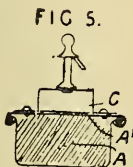


Saddles, riding. The pommel of a military or hunting &c. saddle is fitted with a chain *g* or strap to steady the rider. The chain &c. is fastened at each end and attached to the top of the pommel by a link *h*. The pannels are connected to the saddle at the rear by pockets fitting on to the fan, and in front by screws *f* screwing into sockets *c*. Loss of the screws is prevented by attaching them by a swivelling connection to the chain *g*.

21,118. **Simpson, H., and Simpson, C.** Oct. 7.

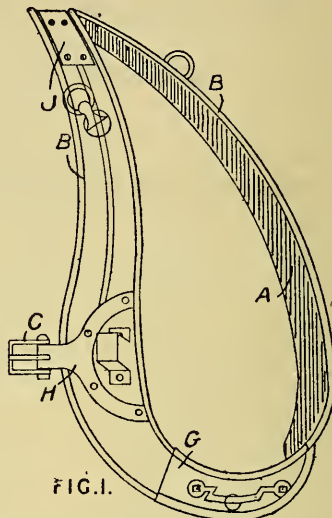


Saddles; lining and padding.—The pads *A* of cart or gig saddles are attached to a sheet-metal frame *A'*, no leather being used. In the cart saddle there are strengthening-beads *L*, corner pieces *D*, a breeching buckle *B*, and a back-band trough *C* with terrets *N*. The padding is attached by wrapping the edges of the lining round

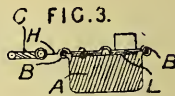


a cane or iron rod which is afterwards enclosed in the beaded edges of riveted plates or strips. In the case of a gig saddle, shown in section in Fig. 5, beads are formed on the frame *A'* itself, and the trough *C* is also covered in as shown.

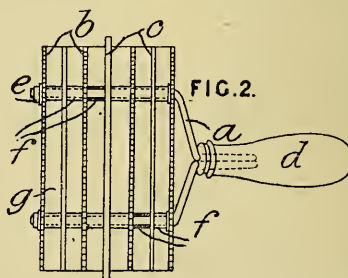
21,119. **Simpson, H., and Simpson, C.** Oct. 7.



Collars, neck; lining and padding.—The padding *A* is attached to a sheet-metal casing *B* with which no hames are used. The traces are attached to buckles *C* on arched metal straps *H* riveted to the casing. The padding is attached by wrapping the edges of the lining round a cane or iron rod which is afterwards enclosed in the beads *B*. An inner strengthening-plate is arranged at *L*, and inner and outer strengthening-plates are bolted together at the top *J* and bottom *G*. The padding is omitted at the bottom to prevent pressure on the windpipe.



21,234. **Picard, P.** Oct. 8.



Currycombs.—The blades, alternately plain and toothed, are made removable so that they may be

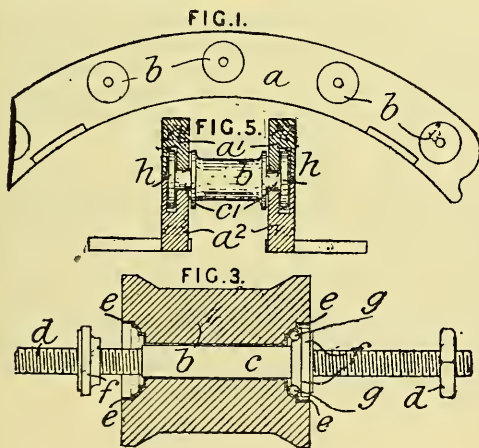
readily sharpened. The blades *b, c* are threaded on rods *a* with ferrules or distance-pieces *f* and nuts *e*. The rods may be fixed into the handle *d*, or the handle may be separately and removably fixed. A hand-strap may be attached to the back of the currycomb. Dust &c. is caught by a back-plate *g*, and the middle blade *c* is lengthened so that it may be knocked on the ground &c. to jerk out the dust. The teeth on the blades *b* may be of ordinary form, or may be inclined, the inclination on one blade being opposite to that on the next.

21,246. **Mason, M. H.** Oct. 10.



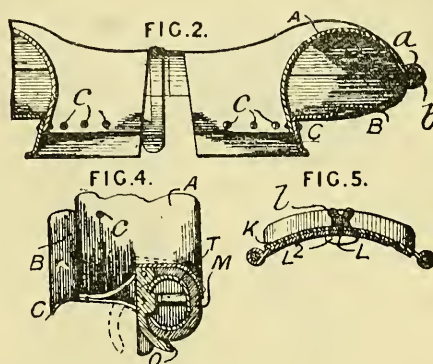
Whips.—The whip thong of dealers' whips is attached to the stock by a ring *d* and ferrule *c*, which is pressed upon the steel core *a* so that the metal enters a depression *a²* or notches &c. in the core. A collar may be first formed on the ferrule to supply the metal for filling the depression. The opening in the ferrule is enlarged at the rear end to cover the end of the plaiting *b*.

21,520. **Parker, F. H.** Oct. 13.



Saddles, harness. The curved trough or side plates *a*, Fig. 1, in or between which runs the backband supporting the shafts of the cart &c., is or are provided with antifriction rollers *b*. The rollers may run upon fixed axles *c*, Fig. 3, secured to the side plates &c. by nuts *d*. Antifriction balls *g* may be introduced between the washers *e* and collars *f* as shown. In another form, the rollers *b*, Fig. 5, are formed with journals *c¹* and discs *h* which are received in circular chambers formed half in each of the separable sections *a¹, a²*.

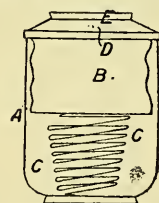
21,656. **Birkbeck, H.**, [Curtis, W. D.]. Oct. 14.



Collars, neck.—The collar is formed of metal, the back part *A* which bears against the animal being of zinc &c., and the front part *B* turned up at *C* to form the forewale being of iron &c. The parts *A, B* are connected together by rivets &c. *c* and by a beading at *a, b*. The two sides or halves of the collar are fastened at the top by curved perforated plates *K*, Fig. 5, of square channel section adjustably united by a nut *l* and a bolt *L, L²* with pins to enter holes in the plates *K*. The sides are fastened at the bottom by a projection *T* on one side fitting into a socket *M* on the other side and kept in place by a spring latch *O*. A dovetailed projection on the latch fits into a recess in the part *M* to take the strain off the pivot pin.

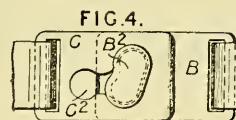
21,930. **Friedeberg, E. S.** Oct. 18.

Nosebags.—The food is placed in an inner bag *B*, and is kept within reach of the animal's mouth by a spring *C* bearing against the bottom of the outer bag *A*. Both bags are attached to a cover *D* with a mouth opening *E*.

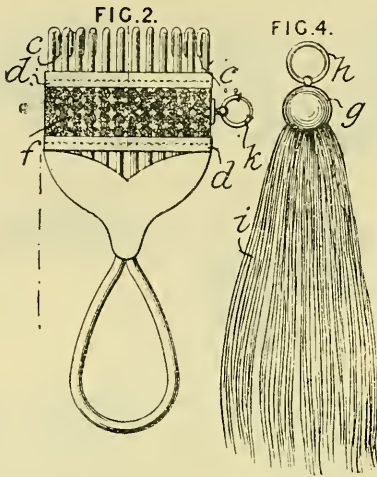


21,960. **Rendell, C. W.** Oct. 18.

Fastening.—Clasps for securing straps and bands, reins, and traces. Two plates *B, C* are attached to the two ends of the straps &c. The plate *B* carries an obliquely-set elongated stud *B²*, and the plate *C* has a somewhat L-shaped slot *C²* in which the stud *B²* engages.

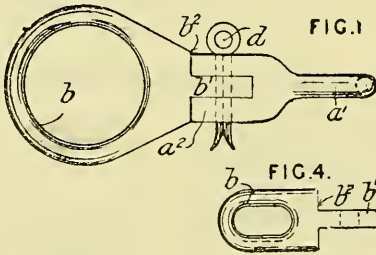


21,966. Hub, C. Oct. 18.



Combs.—The comb *c* for cleaning a hair brush may be used as a mane comb. The comb has a grooming-brush *f* fixed to it, and a hair-comb cleaner *i* attached to it by rings *h, k*.

22,186. Allpress, W. A. Oct. 21.

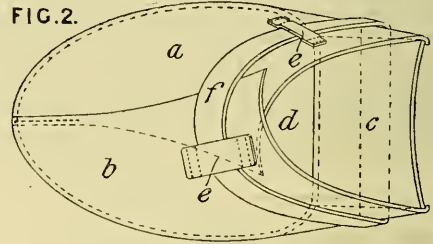


Fastening.—Traces, pole-chains, &c. are fixed to the hame or splinter-bar by a double loop *a', b*. The loop *b*, of circular or D-form or shaped as shown in Fig. 4, is for receiving the trace or pole-chain &c., and the link *a'* is for passing over the hame &c. The two links are connected by a split pin *d* or the like passing through the jaws *a²* and tongue *b¹*, which has a square shoulder *b²* fitting against the squared ends of the jaws. By removing the pin *d* a fallen horse may be readily released.

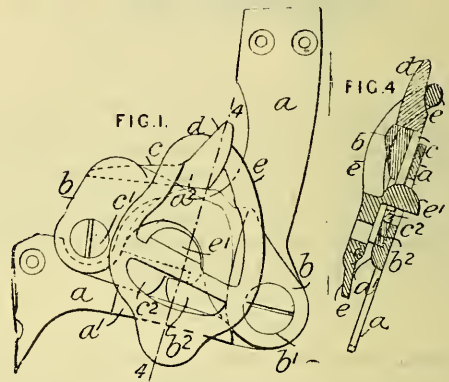
22,245. Thompson, W. P., [Koenig, F.]. Oct. 22.

Horse-boots.—The object is to protect the hoofs of horses or cattle from foot-rot &c., or to cure such diseases. The leather &c. boot consists of

the overlapping front parts *a, b*, the back part *c*, the sole *d*, and the buckled strap *f* passing through loops *e*.



22,287. Burton M. A. Oct. 24.



Stirrup straps, suspending.—Fig. 1 shows an elevation of the saddle-bar, and Fig. 4 shows a section on the line 4—4, Fig. 1. The stirrup leather is attached to the link *e*, which is hung over the projection *d* of the lever *c*, which is pivoted at *c¹* to a lever *b* itself pivoted at *b¹* to the plate *a* fixed to the saddle-tree. The plate *a* and the levers *b, c* have projections *a¹, b², c²* respectively, which rest upon one another. A projection *c¹* on the link *e* rests on the top of all. Should a fall occur, the link *e* comes off the projection *d*, the lever *c* pivoting forwards or the levers *b, c* together pivoting backwards on the pivot *b¹* according to the direction in which the rider is thrown. The Provisional Specification states that the link may be hung upon the converging ends of two levers separately pivoted to the plate *a*.

22,372. Manning, T. Oct. 25.

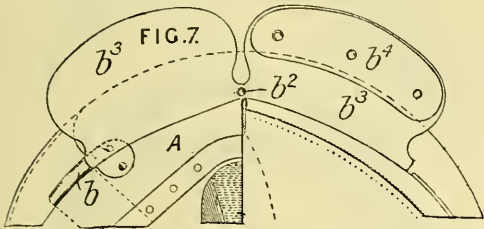
Collars, neck; lining and padding.—Fig. 3

shows a transverse section of one side of the collar. A soft padding *C* of wool &c. extends behind the rim *A* and behind a firm core *B* of straw &c., which is made to shape and then kept in position by a binding of string or wire sewn to the flaps *b* of the rim *A*. The core *B* is covered in front by a



sheath or casing E, and the padding C is covered at the back by a lining D. By this means a firm support is given to the hames and a soft cushion is presented to the horse.

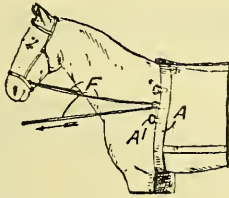
22,573. Boyce, J. W. Oct. 27.



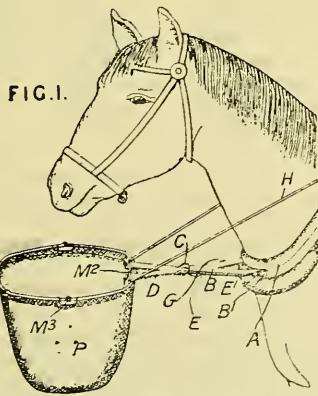
Saddles.—A “false cantle” b^3 is fitted to horse &c. saddles. The false cantle is formed in two parts provided with stems to fit in sockets b fixed to the rear part of the saddle-tree. A screw b^2 serves to secure the cantle, which is provided with cushions b^4 .

23,340. Wurmbrand-Stuppach, E. G. Nov. 5.

Throwing animals, harness for.—The object is to make horses lie down. This is done by pulling on the strap F, which is attached to the halter and passes through rings A^1 fixed on each side of the girth A.



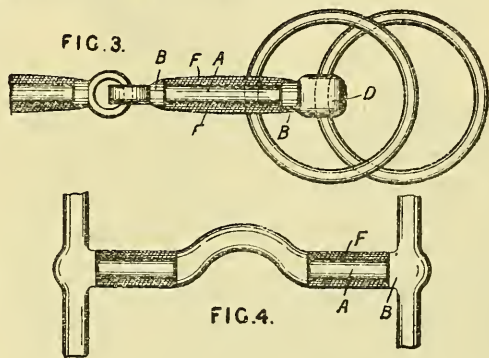
23,994. Weibezahl, H. G. Nov. 14.



Nosebags.—The bag P, which may be used for carrying various articles besides the fodder and is preferably waterproof so that it may be used as a pail, has a metal rim folding together with a

rule joint M^3 . A forked support D, B, with a rule joint at C, is hinged to a bar M^2 and abuts against the rim. The other end of the support is connected to the collar A, the hame strap being clamped between the fixed lugs B^1 and movable lugs E^1 on a bar E sliding beneath the bar B and operated by the lever handle G. This lever may have a catch for locking the rule joint C. A cord H attached to the bag or bar D supports the bag from the collar. In a modification, the lever G is replaced by a rack and pinion, and, in another form, both pairs of lugs B^1 , E^1 are fixed. The stems of the parts B, D may slide together longitudinally and be operated by a lever.

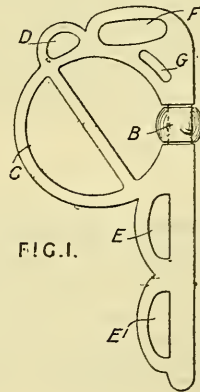
24,244. Craddock, R. Nov. 17.

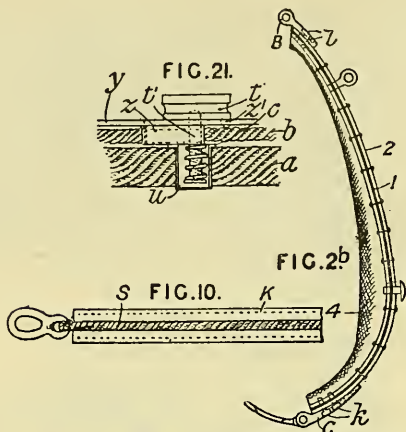


Bits. — Relates to rubber-covered bits. The rubber stops short of the side bars or rings, to give a better appearance. The rubber is cast in position and then vulcanized. Fig. 3 shows the rubber F fixed to the bars A between shoulders B, leaving the ends D of bright metal. Similar bright ends are left on the mouth-bar of a Liverpool bit, or are made on the ends of a chain bit. The shoulders B may be dispensed with, so that the rubber abuts against the ends D. Fig. 4 shows a curb bit with the rubber F in two sections. In this form of bit, the rubber may be continued over the port.

24,512. Behrens, N., and Smith, N. B. Nov. 21.

Bits. — The bit cheeks have the form shown. The ordinary driving-reins are attached to the loop C, and the runaway or check reins to the loops E, E^1 . The curb chain is attached to the loop D, the cheek straps of the bridle to the loop F, and an overdraw check rein to the loop G. The mouth-bar B is attached as shown.



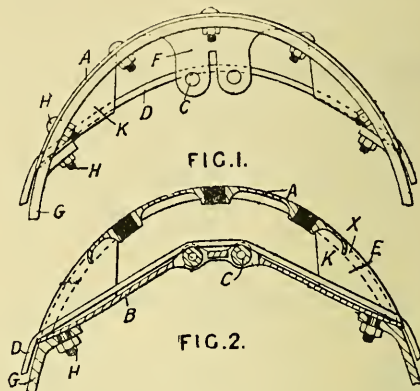
24,900. **Berrurier, V. P.** Nov. 25.

Materials; back and belly bands; breeching; bridles and halters; collars; saddles; traces; fastening.—The various parts of harness and saddlery are made of metal, such as galvanized iron or nickel-plated copper, no leather being used. Those parts which usually are formed from leather straps, such as the bridle, reins, traces, breeching, breast strap, girth, &c., are made of wire ropes sewn &c. to a backing consisting preferably of a hempen fabric treated with a rubber waterproofing-solution. This backing prevents friction against the animal. Fig. 10 shows a trace consisting of a wire rope *s* with backing *K*. Fig. 21 shows a fastening for two wire ropes *a*, *b*. The rope *a* carries a box *u* in which a spring pin *t* is confined by a plate *c*. The pin is formed with a piece *t* provided with a projection *z*¹. The other rope *b* carries a plate *y* with an opening *z* and a socket. The piece *t* is passed through the opening *z*, and the rope *b* is then pulled lengthwise until the projection *z*¹ snaps into the socket. Horse-collars and saddles are made from metal plates suitably padded. The plates in the saddle are superposed, and arch over from side to side. They are connected by the stems of the terret rings. In the case of horse collars, Fig. 2^b, there are side pieces consisting of sheet metal 1 and hoop iron 2, 2 riveted together and suitably attached to the padding 4. The side pieces are united at the top and bottom by adjustable hinges *B*, *C* provided with countersunk holes connected by slots so that the screws *i*, *k* which are used need only be slackened in order that they may be removed from hole to hole to alter the adjustment.

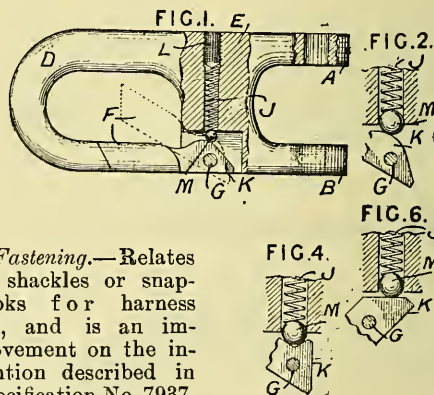
25,444. **Adcock, T. E.** Dec. 2.

Saddles, harness. The tree is of metal, and consists of an arched plate *A* with an opening *E* at each side, flanked by plates *K*, for the backband *D*, which runs over pins or antifriction rollers *C*. These rollers may be carried by ears *F*, *F*, Fig. 1, or by the plates *K*, *K* extended from side to side,

or by a frame *B*, Fig. 2, riveted to the plates *K*. The flaps *G* may be attached by bolts *H*, and additional antifriction rollers may be placed at the



points *X*. The sides of the tree may have fan-shaped extensions for the backband to bear against. The rollers *C* may be replaced by a plate for the backband to bear upon.

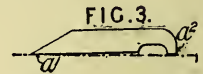
25,792. **Prescott, S. J.** Dec. 7.

Fastening.—Relates to shackles or snap-hooks for harness &c., and is an improvement on the invention described in Specification No. 7937, A.D. 1896. The hook &c. may be used for attaching traces, draught-chains, and pole-chains to the splinter-bars, whipple-trees, poles, or shafts of omnibuses, coaches, and other road vehicles. Fallen horses may be readily released by this fastening. The hook *D* has an enlarged part *E* provided with one or with two perforated lugs *A*, *B* for attachment. The tongue *F* is hinged at *G* and held closed by a spring *J* which bears against the screw *L* and a ball *M* bearing against the end *K* of the tongue. The end *K* may be variously shaped, as shown in Figs. 2, 4, and 6. In the form shown in Fig. 4, the spring holds the tongue open as well as closed, and, in the form shown in Fig. 6, the tongue opens outwards.

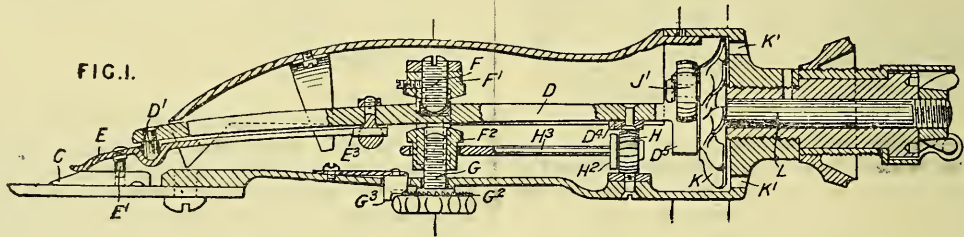
comb J to give a scissors-like cut. The same effect may be obtained by making the comb J similarly hollow ground, or by tilting the cutter G by projections or a cross-bar at n . The blades of the cutter and comb project radially from the centre of oscillation A. The cutter is engaged by pins d^1, d^2 on the side prongs b, b^2 of the lever B, and is pressed down by the bar H pivoted as shown to the central prong b^1 . The lever B is pivoted at A, and the front end is pressed down by a spring D at the back. The spring is slotted for the pivot A, and the lever B is slotted for the crank-pin c .

27,355. Melchior, A. Dec. 28.

Horse clippers and the like.—The cutters of sheep-shearing machines are sharpened and set with the plane a^1 of the cutting-edge slightly inclined to the plane of the comb, a heel a^2 being left projecting beyond the plane of the cutting-edge as shown. Grinding-discs suitable for the purpose are provided.



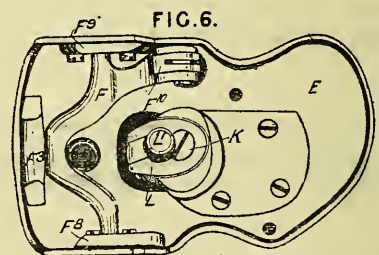
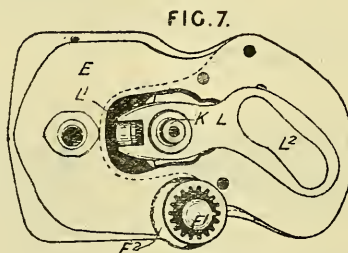
27,356. Melchior, A. Dec. 28.



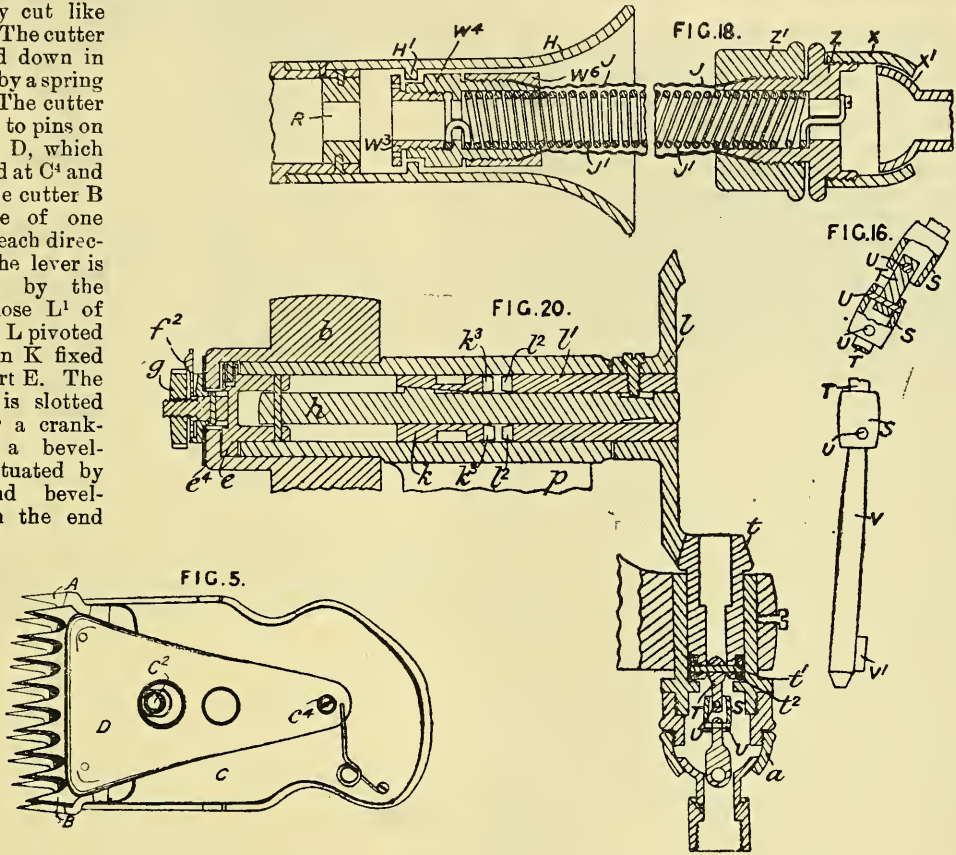
Horse clippers and the like.—The actuating-lever D of a sheep-shearing machine is pivoted on the rounded end of the screw F carried by the upper bar F^1 of a frame sliding in vertical guides in the casing. The tension-adjusting screw G engages with the lower bar F^2 of the frame, and is locked by a pawl G^3 engaging with ratchet teeth G^2 . The lever D is forked at D^5 for the crank-pin J^1 , and bears at D^1 on the rollers H carried by pins projecting from the curved plate H^2 on the rod H^3 pivoted to the part F^2 of the frame. The front of the lever D carries a rounded pin D^1 , which bears on the forked plate E bearing on the cutter C and moving it by pins E^1 . The plate E has a spherical bearing at E^2 . A disc K, mounted on the shaft L and provided with vanes, rotates in front of openings K^1 and causes air to pass through the clipper and escape near the cutter C.

27,385. Becker, E. Dec. 28.

Horse clippers and the like.—Relates to sheep clippers and mechanism, including a flexible shaft, for driving them. Fig. 5 shows a plan of the lower part C of the casing with the cutters A, B and the actuating-lever D, and Figs 6 and 7 show respectively the



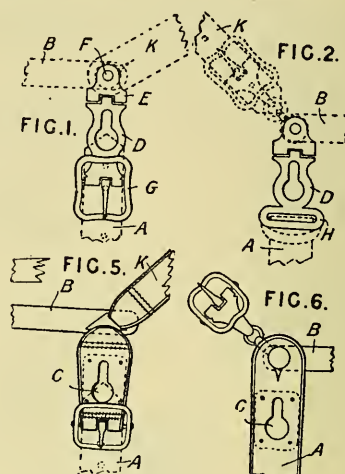
mechanism below and above the upper part E of the casing. The two parts C, E are held together by a bolt C², Fig. 5, and a nut. The cutters A, B have sharp edges on both sides of their teeth, so that they cut like scissors. The cutter A is held down in its place by a spring plate. The cutter B fits on to pins on the lever D, which is pivoted at C⁴ and moves the cutter B the space of one tooth in each direction. The lever is actuated by the hinged nose L¹ of the lever L pivoted on the pin K fixed to the part E. The lever L is slotted at L² for a crank-pin on a bevel-wheel actuated by a second bevel-wheel on the end



of a spindle which turns in the bearing R, Fig. 18, and is connected to a flexible shaft. The tension is adjusted by turning the nut F², Fig. 7, which draws up the bolt F¹⁰, Fig. 6, pivoted to the piece F, which rocks in bearings F⁸, F⁹ and carries a pivoted cross-piece F³ bearing on the cutter B. The nut F² is locked by a spring piece F¹ lying in a slot in the bolt. The flexible shaft above mentioned consists of rigid and of flexible sections. The rigid sections consist of a metal tube enclosing a rod, and the flexible sections consist of links formed alternately of tubes S, Fig. 16, and rods T pivoted together by pins U, U at right-angles to one another. The end rod V is lengthened, and carries a feather V¹ for a longitudinal slot in a tube hooked to the rod of the rigid section. The flexible section is enclosed in a wire coil J¹, Fig. 18, encased in a leather tube J. One end of the coil is gripped between the screwed sleeves W³, W⁴, and the other end is fixed by a screw to the sleeve Z. The leather casing is gripped on the sleeves W⁴, Z by nuts W⁶, Z¹ respectively. The handle H has a swivelling connection with the sleeves W³, W⁴ by means of an annular projection H¹ which fits between them. A universal joint is arranged at X, X¹. Fig. 20 shows the mechanism for driving the flexible shaft S, T. The rod T is pivoted to the pin t¹ passing through the sleeve of the bevel-wheel t and carrying antifriction rollers t². A universal joint is made at a. The bevel-wheel t engages with the wheel l fixed to the sleeve l¹ provided with teeth l², which may be put into engagement with teeth k³ on the clutch k sliding without turning on the constantly-rotating spindle h. The clutch is operated by a lever passing through the sleeve of the bracket p. The spindle h is pivoted to the piece e provided with a nut g which draws the piece e and a washer together so as to grip the flange e⁴ of the driving-pulley b. A projection on the piece e rides over a spring projection on the flange e⁴ if great strain is thrown on the clippers, so that the pulley b turns without driving the clippers. The nut is locked by a spring catch f² engaging with notches on the nut.

27,432. Lean, W. W. Dec. 29.

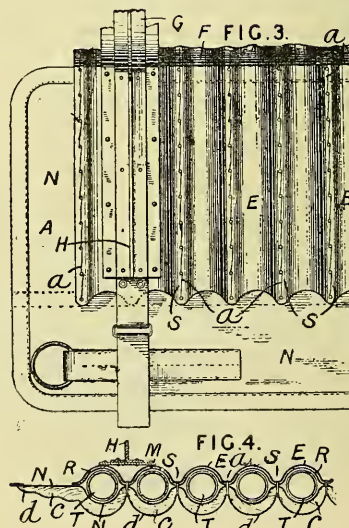
Fastening spurs. The under strap A on each side near the spur B is formed with a keyhole slot C, or is connected to a piece D with a keyhole slot. The slot on each side is to fit over a projection formed on the gaiter, legging, &c., or formed on the boot and projecting through a hole in the gaiter &c. or in a prolongation of it. The gaiter &c. is thus prevented from working round. The slot may be in a metal piece D hinged to a piece E fitting over the usual studs F on the spur arms B. The hinge is omitted when the piece is flexible, or when the stud F is long enough to give the play required. The piece on one side of the boot is formed with a buckle G, and that on the other with a loop H for the looped strap A. The upper buckle strap K may be sewn &c. to the spur arms.



A.D. 1899.

53. Ross, A. M., and Cantwell, E. L.
Jan. 2.

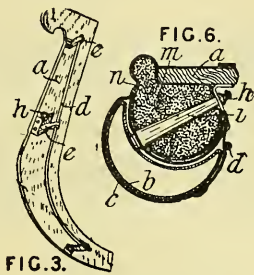
Saddles. pack. Fig. 3 shows the front, near-side portion of one form of pack saddle, and Fig. 4 shows a section on A-B. The side bars E of the tree are padded with elastic tubes T arranged either longitudinally or transversely. These tubes may be made of rubber strengthened with cloth, or of spring steel, such as wire or perforated ribbon helically coiled. The steel tubes may be covered inside and out with cloth afterwards steeped in a waterproof solution. The side bars E may be of sheet steel, aluminium, &c. corrugated longitudinally or transversely as shown. The tubes T are housed in the larger corrugations, and the stitches a for attaching the tubes pass through the smaller corrugations S. The arch F connecting the side bars may be of corrugated sheet metal, and may be either in a piece with the bars E or riveted thereto. The arch F may also be of leather, or may be dispensed with, the bars E in the latter case being strapped to flat metal or wood bars arranged longitudinally. The side bars E are connected by metal arches G, H of T-section



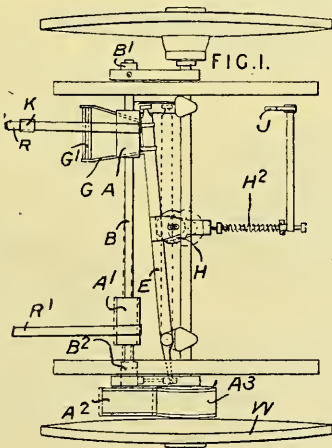
riveted to bars M themselves riveted to the bars E. The arches G carry the load hooks, not shown. The lower margin of the leather plate N, arranged as shown, may be padded with felt or elastic tubes. In Fig. 4, R and *d* show leather linings and *c* layers of felt.

122. **Edwards, E.**, [Dallemagne, E. A.]. Jan. 3.

Collars, neck.—The object is to fit air pads to ordinary horse-collars. The air pad *b* is held in place by a linen casing *c* attached at one edge *n* to the collar body or to the hame *a*, and sewn at the other edge to a bar *d* which is fixed to the hame *a* by brackets *e*. The tube through which the air is introduced is enclosed in a metal tube *i*, which passes through the ordinary stuffing *m* of the collar and terminates in a valve *h*.



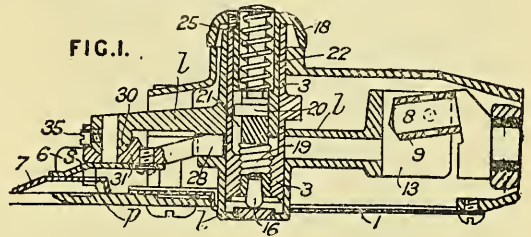
291. **MacAlister, J. Y. W.** Jan. 6.



Stopping and controlling runaway and restive horses. — Stopping-reins *R*, *R*¹ are connected respectively to drums *A*, *A*¹ on the shaft *B*, mounted to rotate in the pivoted bearing *B*¹ and sliding bearing *B*², and adapted to be driven frictionally from the wheel *W*. When the pivoted lever *J* is drawn backwards, it causes the spring rod *H*² to actuate the disc *H*, and the pivoted lever *E* to bring the drum *A*² against the drum *A*³, so that, should the horse become restive &c., the shaft *B* is rotated and the reins are wound on their drums. A stop *K* fitted to the rein *R*, when

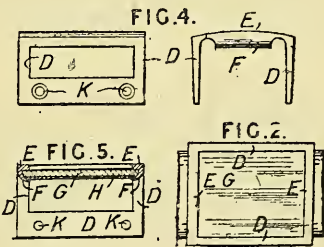
brought against the slot *G*¹ of the device *G*, causes it to shift the lever *E* and stop the rotation of the shaft *B*.

697. **Virtue, W. W.** Jan. 11.



Horse clippers and the like.—The oscillating lever *l* of sheep clippers has a cylindrical bearing on the vertical post *3*, which is fixed to the casing by screws passing through broad lateral wings only partly shown. The lever is thus made to vibrate always in a plane parallel to the bottom cutter. The lever is attached to the cutter *7* by a forked piece *31* having side wings *6* with pins *p* to enter the cutter, a central spring *s*, and a projection *28* turning in a hole in the lever. The rounded end *30* of the lever bears in a socket in the top of the piece *31*, and is kept in place by a screw *35*. The tension is adjusted by turning the cap *18* of the tubular piece *22*, which has a slot *21* engaging with a pin *20* in the screw *19*. This screw carries a pin *16* which bears upon the end of the tubular part of the lever. A spring *25* keeps the cap *18* always against the casing. The casing consists of a single piece of metal with the exception of the removable bottom plate *1*. The lever is worked by the overhanging crank-pin *8* working in a square sleeve *9* which slides between the parallel sides of the fork *13*.

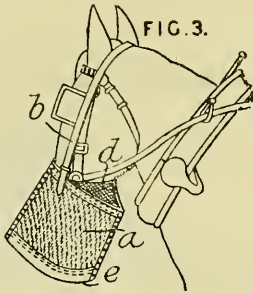
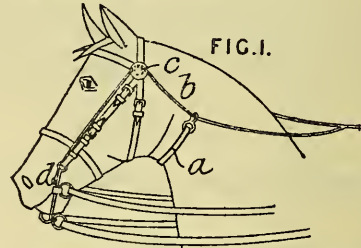
2054. **Wincer, C.** Jan. 30.



Fastening.—Relates to a metal loop for straps. The loop may be applied to hame and shaft tugs, winkers, breeching and kicking straps, &c. The loop consists of a frame *D*, *E* attached by screws or pegs through the holes *K*. The bars *E* have extensions *F* for bending over and supporting a plate *G* of ornamental leather &c. backed by a plate *H* of zinc or other metal.

2099. Neal, E. Jan. 30.

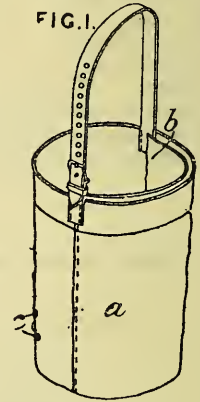
Nosebags.—The ends of the suspending-strap *b* are fixed in front of the middle points of the sides, so as to cause the bag *a* to tilt and thus to keep the horse's nose in the bag. The back part *d* of the mouth of the bag is covered to prevent the escape of the food if the bag is tossed up, and the rear edge *e* is curved forwards so that the food tends to run down beneath the horse's mouth.

**3030. Howell, A.** Feb. 10.

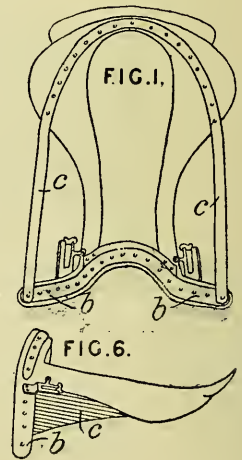
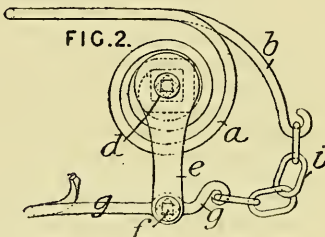
Stopping runaway horses.—A band *a* is pulled upwards so as to press on the windpipe by a rein *b* which passes through a ring or over a pulley *c* and is attached to a bit *d*.

3078. Docking, S. R., and Docking, H. R., [trading as Docking & Co., S. R.] Feb. 11.

Nosebags convertible into buckets. A partition *b* is sewn in the bag *a*. This partition is folded back as shown when the bag is used to contain food; when the bag is to be used as a bucket, the partition is reversed so as to cover the other half of the bag formed with the usual ventilation holes *c*.

**3214. FitzRoy, E. M.** Feb. 14.

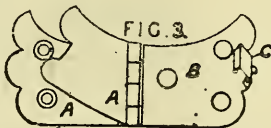
Saddles.—Two extra stays *c*, which may be in one continuous piece, extend from the cantle to the points *b*, where they may be fixed either above or below the point or between the point and the wood and the metal strengthening-plate. The stays may be partly or entirely of wood, metal, rubber, leather, &c., and may be slotted at the front ends for the attaching nail or rivet &c. The stays may be wide enough to fill up the whole space between the seat and the points, as shown in Fig. 6.

**2295. Brigg, T. H.** Feb. 1.

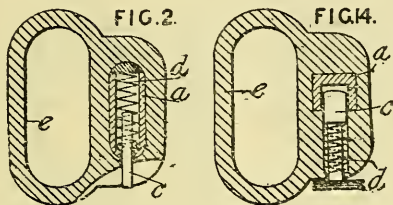
Fastening traces. Each trace-hook *g*, supported on a pin *f* mounted in hangers *e* carried by square bolts *d*, is connected by the chain *i* to the spring *b* formed in one with the coiled spring *a* and clipped or otherwise secured to the vehicle shaft. When the animal is in light draught, the spring *a* only is in action, and the chain *i* is slack, while for heavy draughts both springs are brought into play. The pin *f* may be removable, so as readily to release fallen horses. In some cases, the hook *g* may be formed with the springs *a*, *b*, and the traces may be attached to whipple-trees connected by chains to two of the devices described, applied to the axle.

2513. Smith, F. Feb. 4.

Collars, neck; fastening.—The collar is divided at the top so that it can be passed round the neck, instead of over the head. The collar is fastened by a device comprising the plates *A* and *B*, which are fixed respectively to each end of the collar. One of the plates *A* is hinged, and the plate *B* carries a hinged spring catch *C* to engage with this hinged part.

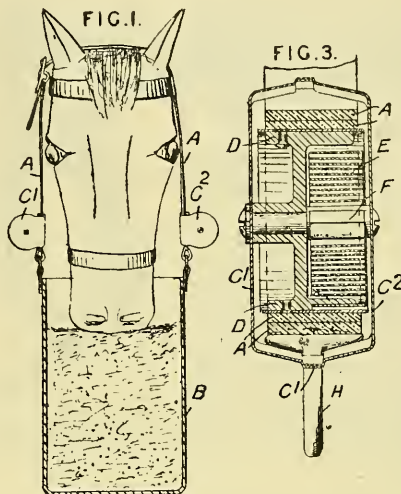


3288. Wood, A., and Walter, W. M.
Feb. 14.



Fastening.—Relates to improvements on the invention described in Specification No. 19,093, A.D. 1894, and to a loop or noose for straps particularly applicable for securing traces and pole-straps, to enable fallen horses to be readily released. The trace &c., after passing through the loop *e*, has its metal end *a* fastened to an eye in one side of the loop. The fastening is enclosed within the loop as shown in Fig. 14, or within the piece *a* as shown in Fig. 2, and is preferably of a non-corrosive metal, so that the fastening is not liable to injury. The fastening consists of a bolt *c* which is forced outwards by a spring *d* or springs, or falls by gravity. In the latter case, and also, if desired, in the former, the protruding end of the bolt is slotted for a tab or spring pin &c. The bolt *c* may be operated by a separate sliding bolt beneath it.

barrel *D* turning freely on the pin *F* fixed to the case. The strap *A* is wound upon this barrel, which contains a spiral spring *E*. The case is riveted to

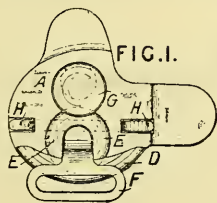


the nosebag &c., or has a snap hook for attaching to it. As the food is consumed, the spring winds the strap *A* on the barrel and thus raises the bag.

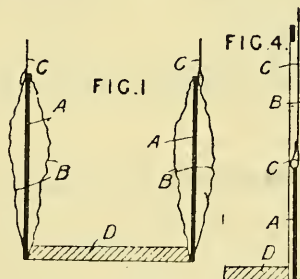
3502. Smith, W., and Woolley, J. Feb. 17.

Stirrup straps, suspending.—The stirrup

strap is attached to a loop *F* which carries a roller *E* supported by the curved flange *D* of the plate *A*. The plate *A* is fixed to the saddle-tree, and carries a button *G* which overhangs the roller *E*. If the rider is thrown, the roller *E* runs up one side of the flange *D*, pushes back one of the springs or projections *H*, and escapes, thus setting free the stirrup leather. The roller may be made in a piece with the loop *F*, and thus slide instead of rotating.



3703. Bennett, S. Feb. 20.



Nosebags.—The bag is provided with springs to keep the level of the food up to the animal's mouth. The springs *A* are fixed to the wood or iron bottom *D*, and at the top are fixed to the bag *B*, Fig. 1, and strap *C* if the bag is flexible, or to the strap *C*, Fig. 4, only, if the bag is of leather or other stiff material. The Figures show sections of the bags when empty.

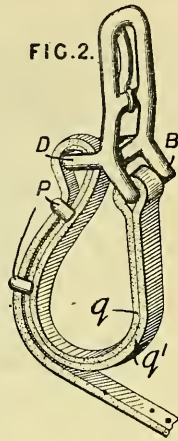
3631. Chatwin, A. Feb. 18.

Nosebags and food-containers; fastening.—Relates to spring attachments *C*¹, *C*² for the suspending-straps *A* of nosebags and nose tins *B* by means of which the level of the food is kept up to the horse's mouth during its consumption. The spring attachment consists of a case or frame *C*¹, *C*² containing a

4067. Guérineau, A. Feb. 23.

Tugs, shaft.—Relates to tug-buckles, and more particularly those intended for light harness for

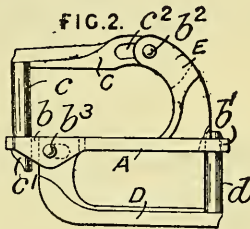
dogcart and the like, and consists in the addition to an ordinary tug-buckle of two rectangular frames B, D, the latter being approximately at right-angles to the buckle and being provided with an antifriction roller. The strap is attached to the frame B, and is passed through the frame D so as to form a loop which may be used as a tug. The free end is bent back against the loop, and may be loosely clamped thereto by metal rings P in order to prevent lateral motion. The free end of the strap may be buckled to the outer bellyband, and the tug proper may be secured to the backband, as usual, by the upper part of the buckle. A metallic band may be fixed between the doubled portions q, q' of the strap for stiffening it.



4096. Thorsen, G. Feb. 24.

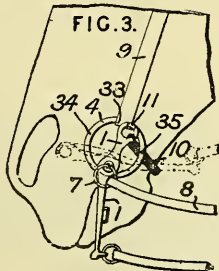
Fastening traces.

Fig. 2 shows the closed position. The body A of the clevis or shackle is slotted at b, b' , and has pins b^2, b^3 on which the arms C, D are pivoted. When the pivoted arm E is lifted, the slot c^2 of the arm C can be moved over the pin b^2 to free the end c^1 of the pin c; and this also allows the release of the pin d from the slot b^1 .



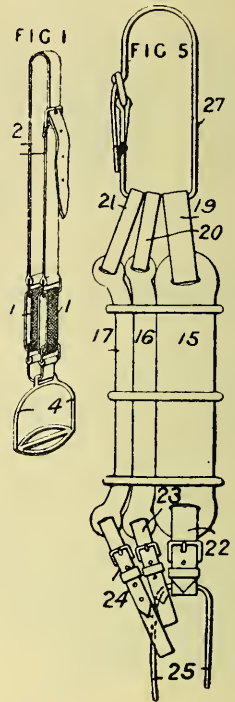
4130. Mewburn, J. C., [Liesching, L. O.]. Feb. 24.

Bits.—The bit is connected to the cheek straps 9 by loose rings 4, and the side bars 1 of the bit are bent back at their upper part and connected to the curb chain 10 by a ring with a spring tongue 11 or by a hook. The mouth-bar is rigidly fixed to the side bars 1, and the plane of the port lies in the plane of the upper parts of the side bars. The reins 8 are attached to rings or loops 7 swivelled in various ways to the projecting ends of the mouth-bar. In a modification, the ring 4 has a loop at 33 for the cheek strap 9, and slots at 34 and 35 for the noseband and rein 8 respectively.

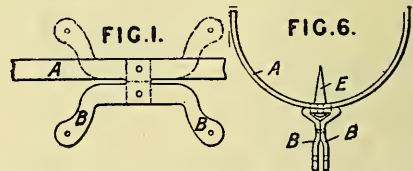


4222. Mewburn, J. C., [Liesching, L. O.]. Feb. 25.

Stirrups; stirrup straps, suspending; fastening.—To prevent jar, elastic bands or springs are interposed between the stirrup leather and the saddle or the stirrup; or the stirrup leather may itself be elastic. The Provisional Specification states that the bow or the tread of the stirrup may rest upon metal or other springs. In the form shown in Fig. 1, the stirrup leather 2 is attached to the stirrup 4 by rubber &c. bands 1, and, in the form shown in Fig. 5, the stirrup leather 25 is attached to the saddle or a pad over the horse's withers by the three rubber &c. springs 15, 16, 17 held in place by loops 19, 20, 21 and straps 22, 23, 24, which may be of different lengths so that the springs 15, 16, 17 come successively into action. The strap 27 may cross over the saddle, and be attached to the opposite saddle-bar.



4295. Sauer, D. Feb. 27.

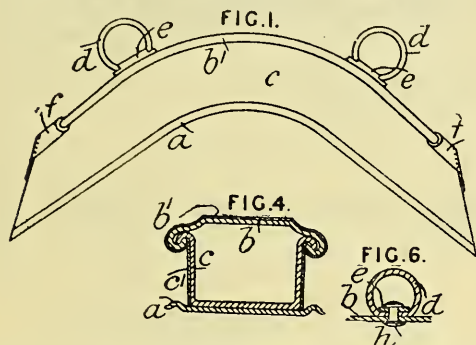


Spurs.—The complete spur, with the exception of the rowell and its pin and the spiked rivet E, is made from a single blank stamped out of sheet metal. The blank, as shown in Fig. 1, consists of a strip A and wings B, B. The wings are first bent into the position shown by dotted lines, and, after the insertion of the spike E, are brought together and riveted, as shown in Fig. 6.

4301. Willmore, C. H. Feb. 27.

Saddles.—Saddle-trees for van, cab, &c. harness are made with a sheet-metal top riveted to the boards beneath. Fig. 1 shows an elevation of this top part, Fig. 4 shows a transverse section, and

Fig. 6 shows in cross-section a method of fixing the terret ring. The beaded base-plate *a* is riveted to the channelled part *c*, which may be closed by a top *b*, the edge of which engages the edges of the

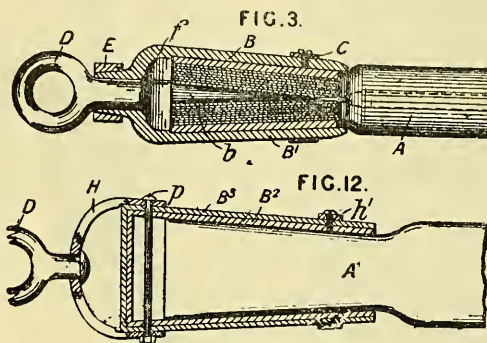


part *c*. The parts *b*, *c* may be covered with sheet brass &c. *b*¹, *c*¹, as shown. Brass pieces *f* hide the edges of the parts *b*. The terret ring *d* may be screwed into place, or may be attached by a rivet *h* passing through the plate *b*, a slot in the ring, and a plate *e* riveted in place.

4437. Prescott, S. J. Feb. 28.

Traces; fastening.—Relates to securing hooks, eyes, shackles, and the like to the ends of the traces described in Specification No. 15,690, A.D. 1895, or to other traces. In the form shown in Fig. 3, the round trace *A* is gripped in a taper

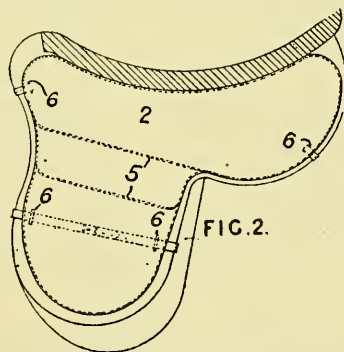
socket formed of two half pieces *B*, *B*¹, which are held together by rings *C*, *E*. A taper pin *b* is inserted in a channel in the end of the trace, which



may be channelled throughout. The eye &c. *D* is kept in place by the enlarged end *f* as shown. Fig. 12 shows another form for ordinary leather traces, or for flat traces of the improved construction above mentioned with or without a flat core of metal, vulcanite, or celluloid &c. The end of the trace *A* is gripped between two taper boxes *B*², *B*³ of square channel section which fit together and are fixed by a ring *h*¹ or rings and by a bolt *p*, which also serves to secure the bail *H* carrying the eye &c. *D*. A similar fastening may be used for round traces. A fallen horse may be released by removing the rings *C*, *E*, *h*¹ and bolts *p* so as to allow the parts of the taper socket to open out and free the trace.

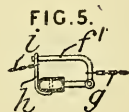
4578. Thomson, J. March 2.

Saddles.—Relates to numnahs or linings for riding, harness, cart, &c. saddles to prevent chafing. The lining is made of some smooth hard material, preferably sheet metal, such as zinc, aluminium, or steel, which may be strengthened at the edges by wiring. The lining 2 may have loops 6 for strapping it in place, or it may be used instead of the usual padding, being in that case fixed directly to the tree. The lining may be in one or in two pieces, one for each side, and may terminate at the lines 5, 5 in Fig. 2.



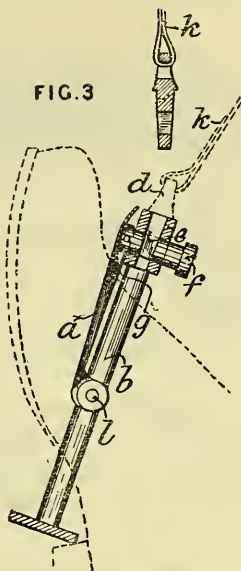
4803. Sleep, W. H. March 4.

Fastening traces to whipple-trees of the kind described in Specification No. 6681, A.D. 1885, [Abridgment Class Road vehicles]. Fig. 5 shows a single swinging bar having a pivoted arm or hook *f*¹, which is retained in the position shown by the spring *h*. A pall on the chain *i* releases the spring, and the chain *g* attached to the horse opens the hook.



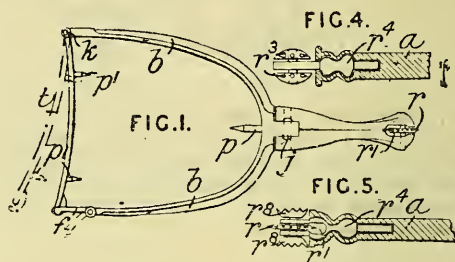
4875. Bischoff, B., and Knopf, C.
March 6.

Stirrups.—The safety-stirrup *b* is attached to the stirrup leather *k* by an eye with a shank *d* which fits into a socket *e* crossed by a pin *f* connected to a bow piece *a* hinged at *l* and normally pressed outwards by springs *g*. The shank *d* has a hole with a slot leading downwards from it, and the pin *f* is reduced in one part to pass through the slot. If the rider falls with his foot in the stirrup, the toe of his boot presses back the pin *f* till the reduced part comes opposite the slot in the shank *d*, when the stirrup is released.



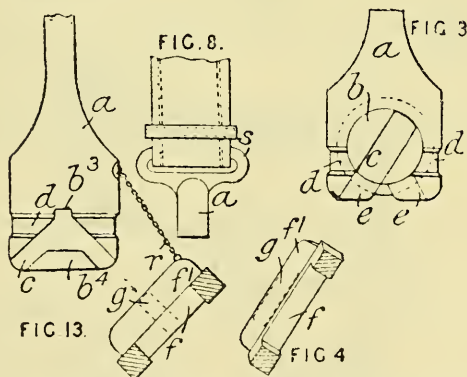
in the rotating plate *b*. Grooves *e* are made in the bow, and the tread is free when the groove *e* is in a line with either of the grooves *e*. In the form shown in Fig. 13, a projection *g* normally rests in the notch *b*³ and upon the block *b*⁴. The projection is freed when it is turned to coincide with either of the grooves *c*. In other forms, the projection *g* and its socket in the bow are of circular or segmental shape.

5186. Clarke, J., and Humphris, F.
March 9.



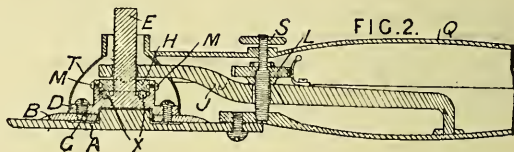
Spurs.—The rowel *r* is prevented from becoming clogged by dirt &c. by forming the space *r*¹ behind it. To enable the rowel to act at various angles, it may be mounted upon a piece *r*¹ free to rotate upon or within the neck *a*. The rowel may consist of hemispherical pieces *r*³ studded with spikes, or the ordinary wheel *r*², Fig. 5, may be supplemented by toothed pieces *r*³. To prevent the rider from catching his spur in the harness or against the treads of staircases, the neck *a* is spring-hinged at *j* to the part *b*. The spur is fixed to the boot heel by a spike *p* and spike *p*¹ on a spring strip *t* hinged at *k* and held in place by a hinged loop *f*.

5185. Clarke, J., and Humphris, F.
March 9.



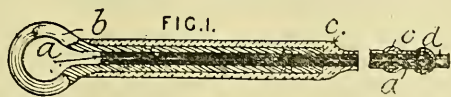
Stirrups.—The eye *s*, Fig. 8, is made at right-angles to the plane of the bow *a* to facilitate the insertion of the foot. The tread *f* is released from the bow *a* when either edge of the tread is strongly depressed, as would occur if the rider were thrown. One end of the tread may be connected to the bow by a chain *r* or hinged loop to prevent its loss. Each end of the tread *f* has bevelled projections or edges *f*¹ which fit into bevelled grooves *d* in the widened end of the bow. The release of the tread may be effected in various ways after the tread has been strongly turned to free the edges *f*¹ from the grooves *d*. In the form shown in Figs. 3 and 4, the tread has a projection *g* fitting into a groove *c*

5556. Silley, J. H., and Bacon, W. W.
March 14.



Horse clippers and the like.—The removable cutting-blades *B* are fixed by screws *C* to a disc *D* which is rotated continuously above the comb plate *A* by a flexible shaft connected to the spindle *E*. The tension is adjusted by the nut *L*, which bears upon the lever *J* provided with projections resting upon the plate *H*. This plate bears upon the antifriction balls *X*, *X*, and is kept in place by screws *M*. The cover *T* is formed on the end of the hinged casing *Q*, which is held down by a nut *S*.

5866. Goodwin, J. H. March 17.



Materials.—Relates to materials for traces, reins, bridles, collars, bellybands, breeching, pole straps, saddles, &c. A thin hardened and tempered steel strip is encased in leather. The leather may be protected from injury by the steel by casing the latter in canvas, rubber, &c. The steel core may be single or double. Fig. 1 shows a trace with a doubled steel core *a* encased in leather *c*. Attachment loops are shown at *b* and *d*.

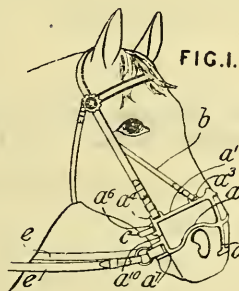
5948. Maigret, A. E. G. G. J. F. March 18.



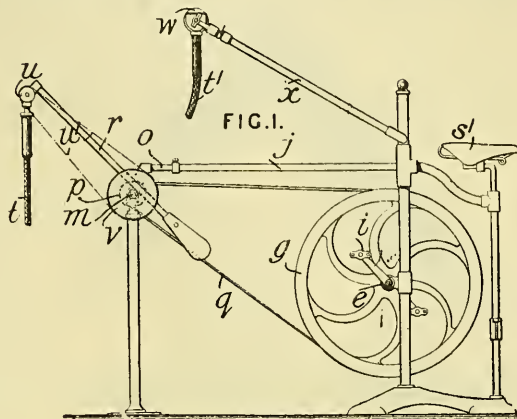
Saddles, girths for. The girth is made elastic. It may be composed of one or more bands of covered or uncovered rubber attached to any suitable fastenings at the ends. Inextensible cords may be combined with the rubber. In the form shown, the rubber cords *a* are spaced apart by leather straps *c*, and are stitched between leather pieces *d* carrying buckles *e*.

7053. Alexander, A. E., [*Humane Bridle Co.*] April 4.

Bridles.—No bit is used, but the horse is controlled by a framework *a*, *a*¹, *a*², *a*¹⁰ provided with eyes *a*³, *a*⁴, *a*⁶, *a*⁷. The rigid part *a* presses on the nose, and the eyes *a*³, *a*⁴ are for the head straps *b*. The reins *e* are attached to the eyes *a*⁷, and the eyes *a*⁶ are connected by a strap *c*. In modifications, the reins are attached to a strap which runs through both of the eyes *a*⁷, and is provided with a stiffening-piece to bear against the jaw, or the reins are fastened to a pair of crossed straps, each of which passes through one of the eyes *a*⁷ and is attached to the opposite eye *a*⁶.

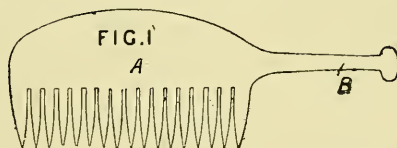


7181. Barton, W. W., and Barton, A. T. April 5.



Horse clippers and the like.—Relates to treadle-driven mechanism for serving the double purpose of shearing sheep and clipping horses. The sheep and the horse clippers are attached respectively to the flexible shafts *t*, *t*¹ connected by bevel gearing to pulleys *u*, *w*. The pulley *w* is driven directly by a cord passing over the flywheel *g* on a shaft *e* driven by treadles *i* by an operator sitting on the seat *s*¹ as on a bicycle. Rigid arms *x* support the spindle of the pulley *w*. The pulleys *u* are driven by cords *u*¹ passing over pulleys *v* on a shaft *m* carrying the pulley *p*, itself driven by the cord *q* of the flywheel *g*. The spindles of the pulleys *u* are carried on counterweighted arms *r* pivoted on the shaft *m*. The rod *o* can be adjusted in the frame tube *j* for tightening the cord *q*. The shafts *t*, *t*¹, with their supporting-arms *r*, *x*, are in pairs.

7368. Read, A. W. April 7.

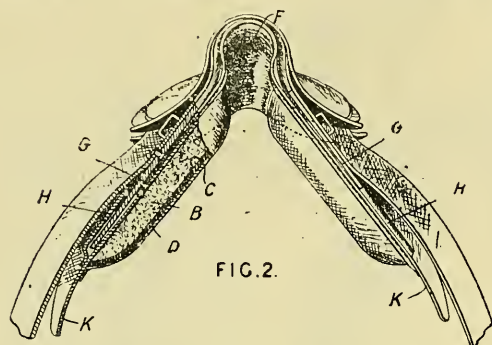


Combs.—The knobbed handle *B* of the comb *A* is used for extracting superfluous hairs from the mane or tail of a horse &c. The hair is wrapped round the handle and then pulled out. The handle may extend at both ends of the comb, or in a line with the central tooth. The handle may be detachable.

7408. Harwood, S. J. April 8.

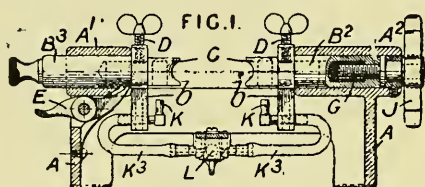
Saddles, numnahs for. The numnah consists of a sheet of leather &c. *K* padded with soft spongy felt &c. *B* covered with a waterproof material *C* and,

if desired, also with soft leather D. The pads are separated at the top F, to leave a ventilating-channel. The numnah is provided with one or



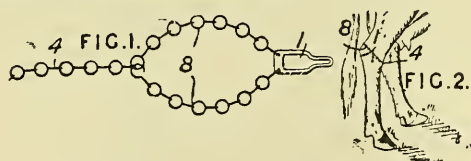
more girth straps (not shown) and may have pockets H for the points G of the saddle-tree.

7461. Pearson, M. H. April 10.



Traces; straps and bands, burnishing. The burnishing-dies C for burnishing the edges of traces and other straps and bands &c. are fixed by screws D to the cylindrical extensions B², B³ sliding in bearings A¹, A² on the uprights A, A. The extension B³ is rapidly adjusted by sliding it by hand, and is fixed by a pawl E engaging with ratchet teeth. The extension B² is slowly adjusted by a screw G with hand-wheel J. The dies are heated by burners K connected by flexible tubes K³ to a three-way cock L. In a modification, gas jets are placed at b. The Provisional Specification states that the dies may have several faces of different shapes and be mounted on forks, and that they may be in the form of wheels and may be pressed against the work by springs. It is also stated that one of the supporting-arms A may be pivoted, or that the tool may be carried by toggle-levers. Feed-rollers are also mentioned.

7593. Bassett, H. April 11.

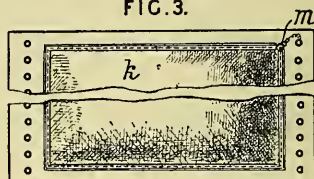


Hobbles.—A hobble for cows &c. consists of an adjustable chain loop 8, which is held in

a position around the hock bone by the chain 4, which passes round the leg and is fastened to the link 1. The hobble acts as a tight garter.

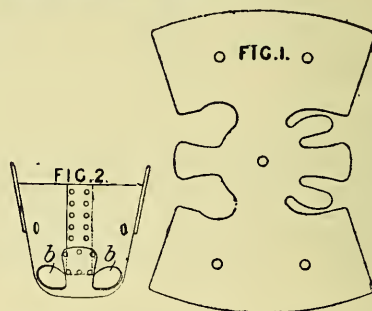
7714. Plósz, B., and Waugh, A. A. April 12.

FIG. 3.



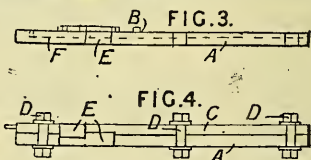
Bandages.—Shin and like bandages or pads for horses and other animals are provided on their inner sides with one or more pneumatic cushions k, which can be inflated through a valve or valves m.

7850. Hunter, W., Hunter, W. S., and Hunter, S. T. April 14.



Muzzles for animals; saddles.—Muzzles for horses &c. are made from a sheet of leather cut to the form shown in Fig. 1 and then folded, riveted, &c. and blocked to the form shown in Fig. 2, where b, b are openings opposite the nostrils. Buckets and leather sockets for carbines &c. may be similarly made without a bottom seam.

8087. Pinder, W., Waterhouse, D., and Corbitt, C. E. April 18.



Materials; traces.—Traces &c. are made from the material described in Specification No. 24,440, A.D. 1897, (which consists of cotton duck coated with vulcanized rubber), by coating a piece of the material with rubber solution, folding it, coating it

again, trimming it, stitching it where required, and finally compressing it in a mould so as to make the solution permeate the fabric. The mould consists of two parts A, C held together by clips E and bolts D. The part A has pins B for the buckle holes, and has a recess F deeper at the ends than at the middle, so that the trace &c. is formed thicker at the ends.

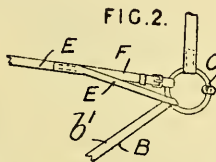
8397. Hirszon, H. M. April 21.

Droppings, devices for catching.—A leathern trough, stiffened by wires and becoming a tube at its end, is fixed to the breeching strap of the harness, and leads to a box on the vehicle. Or a bag may be suspended by the breeching strap and a loop round the horse's tail. Or a long bag may be used, terminating at its lower end in a box.

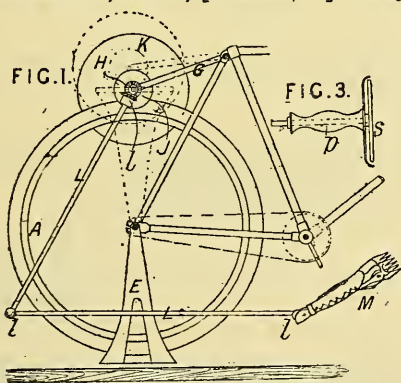
8850. Cazalet, E. J. April 27.

Bridles; martingales.

—The rein E, which is prolonged to run freely through the bit ring C and form a martingale B for attachment to the girth &c., is prevented from running too far, when the horse is checked, by means of a piece F or by a stop at the point b^1 on the part B. By this means the horse is relieved from undue strain. The part F may be in a piece with the rein E as shown, or separately buckled &c. to it.



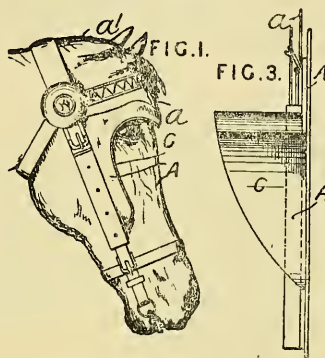
9572. Boulton, A. J., [Howard, J.]. May 6.



Horse clippers and the like.—Relates to attachments for bicycles &c. so that the cycle may be used for driving sheep shears &c. Fig. 1 shows a bicycle in operative position. The rear wheel A is raised from the ground by a stand E, and frictionally drives a grooved pulley J which actuates a flexible shaft L, L, to which the shears M are attached. The shaft is shown with universal joints l , but other forms of flexible shafting may be used. A sharpening-disc K, with coarse abrading-surface for sharpening the comb and

also serving as a flywheel, is mounted on the axis H of the pulley, which is carried by pivoted arms G. A sharpening-disc s, Fig. 3, mounted on the handle p, may be fixed to the shaft L in place of the shears for sharpening the cutter. The back tyre may be filled with water to increase the momentum. To facilitate transport, the stand E may be swung up as indicated by dotted lines, so as to lift the pulley off the wheel, the bicycle then being rideable from place to place.

9576. Abresch, E. May 6.

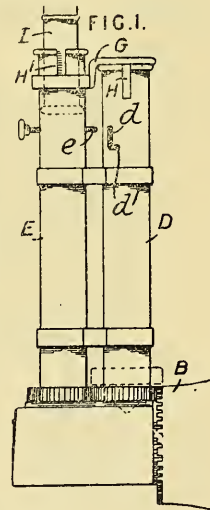


Bridles, blinkers for. The blinker consists of a flat part A cut out opposite the eye and a rim C projecting at right-angles to the part A. The blinkers are connected by straps a to the head strap a^1 .

9826. Wyatt, S. May 10.

Controlling restive horses; rein-holders; whip sockets.

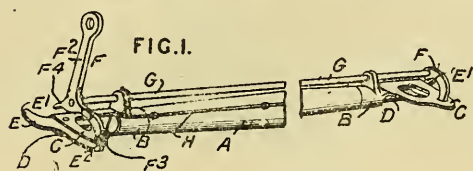
—The reins are passed through one of the slots H and hooked to the pillar D, which is geared as shown to the pillar E and the wheel hub B. Should the horse become restive, the pillars rotate and draw in the reins. The slot H^1 is used as a rein-holder, while the slot H has a stop G mounted to turn on the pillar E. The pillars D, E may remain stationary, by lifting the former and allowing the stud e to rest in the part d^1 of the slot d, d^1 . A whip I may be placed in sockets formed in the top of the pillars D, E.



10,759. Peirce, J. T. May 23.

Fastening traces. When the arm F^2 is drawn back, the shaft G rocks and withdraws the front

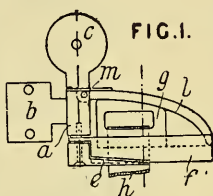
ends of the levers F from, and releases the ends E² of, the hooks E, allowing the traces to be drawn from the parts E¹. The hooks E are pivoted



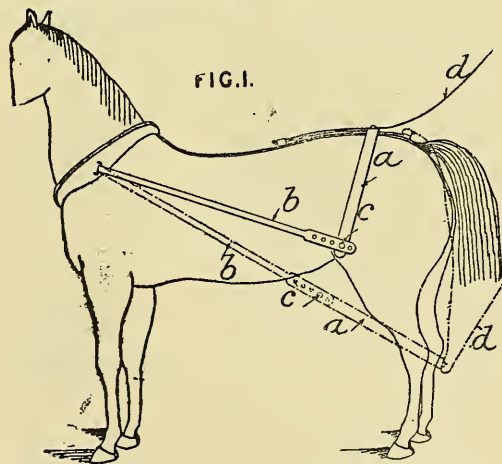
between plates C, D carried by ferrules B of the whipple-tree A. One of the levers F has stops F³, F⁴, and is normally locked by the spring H.

11,837. Rietbrock, F. June 7.

Stirrup straps, suspending.—The stirrup strap *h* is attached to the loop *g*, which is pressed down upon the bar *f* by a spring-actuated rod *l* pivoted at *m* to the piece *a*, *b*, *c* fixed to the saddle. The bar *f*, which normally points towards the horse's head, rests on an arm *e*, and like this arm is pivoted to the part *a*. The arm *e* is grooved for the bar *f*, and the bar is grooved for the loop *g*. In case of accident, the rider stretches his legs forwards, and thus drags the loop *g* along the bar *f* till it becomes disconnected.



11,972. Martin, F. June 8.

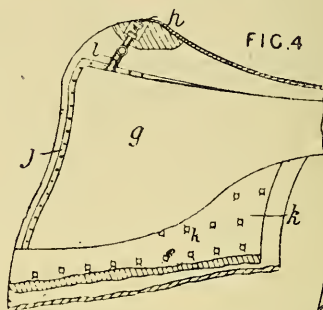


Stopping and controlling runaway and restive horses.—A loop is dropped over the front or hind legs of the horse. In Fig. 1, the loop *a* is pivoted at its ends at *c* to straps or traces *b*, and is pulled into position by a rein *d* attached to the loop and to the crupper. When the fore legs are hampered, the loop *a* is pivoted to a back strap fixed to the crupper strap.

12,465. Reid, J., and Lee, J. June 15.

Collars, neck; saddles.—The collars and saddles are padded by inflated rubber tubes or pads. The collar, shown in section in Fig. 2, has a steel or other metal frame *b*, which may be covered with leather. Hames may be dispensed with. The

FIG. 2



padding consists of an inflated rubber tube *f* held in place by a rubber or canvas &c. lining *a*, the edges of which, wired or not, fit into beads in the frame. The riding saddle, shown in section in Fig. 4, has a lining of canvas, rubber, &c. continued by padding *k*. The rubber pads *g* are inserted beneath the lining at the point *j*, and this opening is then laced up. The pads on each side of the saddle are connected by a tube *i*. Harness saddles are similarly made. The inflating-valves are shown at *h*, *e*.

12,709. Lewis, J., and Davies, G. R. June 19.

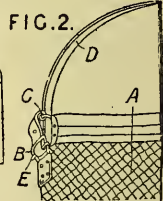
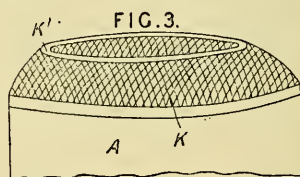
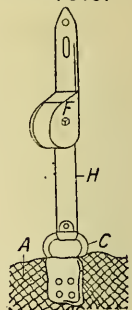


FIG. 5.

Nosebags; fastening.—

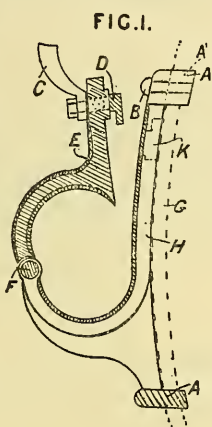
The object is to prevent the waste of food due to the animal tossing the bag to reach it. The food is kept up to the mouth of the animal by a head strap, which may be elastic or may be of leather &c., attached to a spring attachment such as shown in Fig. 5. The elastic strap *D* is



secured to and runs freely through the loop C attached to the bag A. The effective length of the strap is varied by buckles, preferably consisting of a rectangular frame B carrying a sliding bar E round which the strap is looped as shown. The buckles are attached to points below the mouth of the bag, so that there is a greater length of the strap D to stretch out. The spring attachment may consist of a spiral spring or of a box F enclosing a coiled steel strip H attached by a loop C to the nosebag. The mouth of the bag may be closed in by a net K with an elastic band K' round the mouth of it.

12,815. Simpson, H., and Simpson, C.
June 20.

Tugs, shaft.—The tug, especially for use with restive horses, opens out to admit the shaft from the top. The piece E is hinged at F, and locked to the part H by a catch D which is provided with a lever handle C and engages in the recess K. The part H carries loops A, A for the back-band G, and a bolt B passes through the top loop and the back-band at this point.

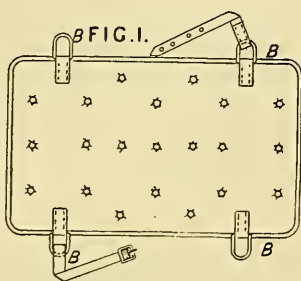


12,947. Stohwasser, F. J., and Winter, G. B.
June 21.

Spurs are made of aluminium or aluminium alloy, and may be plated with gold or silver.

12,975. Herbert, C. W.
June 22.

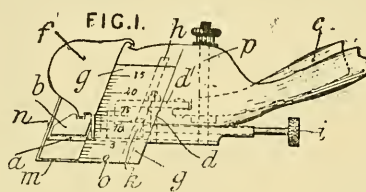
Clothing for animals; throwing animals, harness for.—Relates to pads for preventing injury to animals during casting or throwing operations or during transit. Fig. 1 shows a pad adapted to be secured to the body by means of straps B as shown. The pads may be made of



The pads may be made of

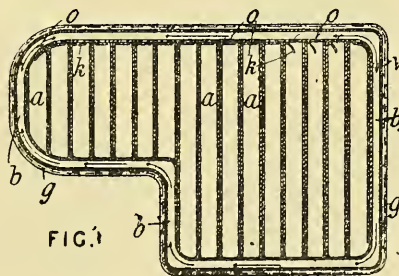
strong cloth &c. stuffed with wool or similar material, or pneumatic pads adapted to be filled with cold or hot water, or air, may be used.

13,246. Appel, G. F.
June 26.



Horse clippers and the like.—Fig. 1 shows an elevation of the clipper. The cutter b is moved in the same direction as the handle c by means of the lever d', which is pivoted at d and is connected at one end to the cutter b and at the other end to the handle c pivoted on the pin p. The length of hair cut is varied by a set of parallel wires, each of which has a part m fixed to the base-plate o and a part n at an acute angle to it entering the case f. The base-plate is moved parallel to the cutters a, b by a rack h engaging with a pinion d on the spindle i. Graduated side plates g fixed to the base-plate o indicate the distance between the parts m of the wires and the cutter a, this distance being equal to the length of hair left after cutting it.

13,618. Regel, K. H., and Richter, A. G. H.
June 30.

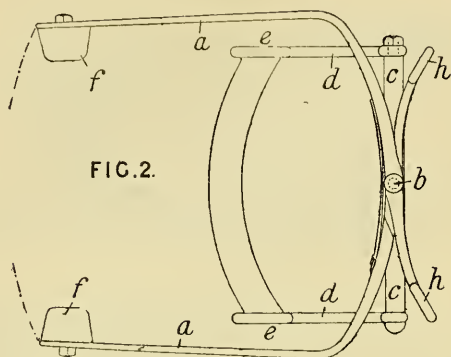


Saddles; pads for.—Pneumatic pads for riding saddles are made of a number of tubes a surrounded by a tube b, which communicates with each tube a by an opening o closed by a valve k. A valve is placed at v for inflating the whole pad, which is enclosed in a suitable covering g.

13,803. Nobes, G.
July 4.

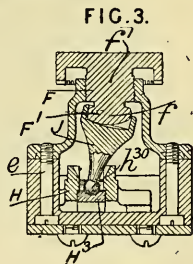
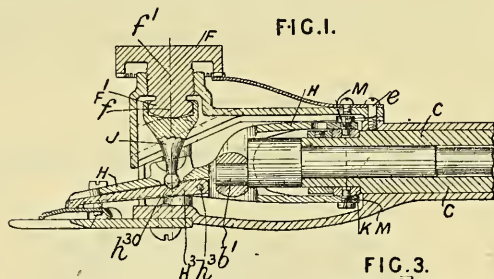
Controlling runaway or restive horses.—The nostrils are closed so as to obstruct the breathing

by means of rubber &c. pads f adjustably fixed to arms a pivoted at b to a cross-bar c and provided with loops h for check reins. The bar c is fixed



to arms d so as to be adjustable on its axis. The arms d are connected to the bit cheeks e , or otherwise attached to the bridle.

14,463. Stewart, J. K. July 13.



Horse clippers and the like.—Relates mainly to the pivoting of the cutter-actuating lever H to the sleeve C and the tension screw F to the pressure pin J . The lever H is forked, and carries pins M engaging with a ring K which swivels upon the sleeve C . The lever, besides the horizontal and swivelling movements thus obtained, has a slight vertical movement. This may be obtained by making the pins M a loose fit in the holes in the ring K , or by giving the ring a concave under bearing-face to bear on the upper convex face of another ring fixed to the sleeve C . The screw F has a rounded end F' to enter a socket in the head of the pressure pin J , which carries a ball h^{30} for entering a socket in the pressure lever h^3 . This lever is pivoted at h^3 to the main lever H actuated by the crank b^4 . The end and sides of the knob F' are spherically curved

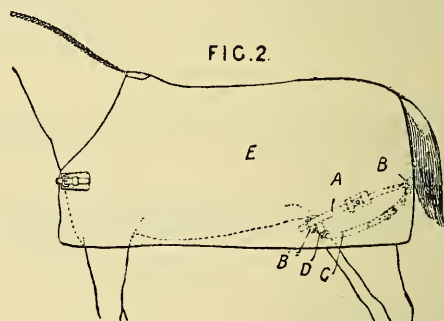
on centres f' and f respectively. The socket of the pin J has cylindrical sides and a bottom curved in such a way that the knob h^{30} always moves in a horizontal plane notwithstanding slight derangements of adjustment due to wear, dirt, &c. The relative position of the fixing-screws e and the tension screw F is, as shown, to minimize still further the effect of such derangements.

15,075. Cole, A. July 21.



Horse-boots.—Horse-boots for use on lawns &c. consist of a sole B of leather &c. riveted to a plate A formed with a toe flange a , and either strapped to the hoof or provided with a flange bar d for clipping over the heels of the ordinary shoe. The bar d is adjusted by a screw c passing through a nut b riveted to the plate A . Plugs of rubber &c. f may be attached to the sole B as shown.

15,446. Montgomery, G. A. July 27.

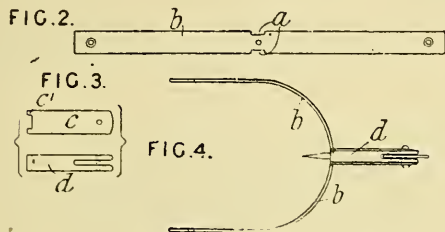


Clothing for animals.—The body cover E is secured to each hind leg by a strap C , which is connected at one end by a snap hook D to a ring B and at the other end directly to another ring B . These rings run freely on the strap A , sewn at its ends and centre to the cover E . By employing this method of securing, the girth and crupper may be dispensed with.

15,620. Hausmann, G. July 31.

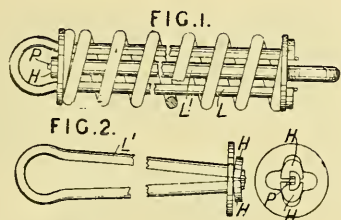
Spurs are made from blanks cut from suitably-rolled strips, the blank b being bent to form the

bow, and two other blanks *c*, *d'* being bent to form a hollow rowel stem *d*. The stem and bow are



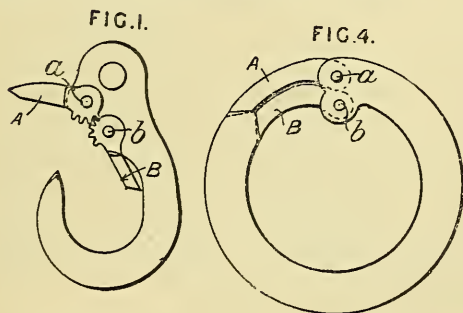
hard-soldered together, suitable notches *a* and tongues *c'* being formed on the parts to strengthen the connection.

15,686. Mills, J. Aug. 1.



Fastening.—Relates to spring couplings used for draw-chains in harness and for other purposes, and to an improvement on the invention described in Specification No. 14,963, A.D. 1894. In order to dispense with nuts, the limbs of the yokes *L*, *L'* are formed with hooks *H* and pins *P* at the ends; they are held together by clamps placed over the pins, and passed through the washers; the clamps are then removed and the limbs spring out, so that the hooks lap over the edges of the slots in the washers.

15,981. Woodford, H. G. Aug. 4.



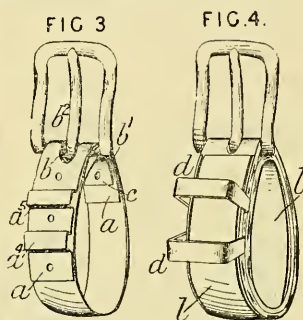
Fastening; materials; dog leaders.—Relates to hooks, rings, and the like for harness, dog,

and other chains. Two tongues *A*, *B* are used, and these are separately pivoted on the same or different pivots *a*, *b*, and are geared together in such a way that opening or closing one tongue necessarily opens or closes the other. Toothed gearing may be used as shown, or the tongues may be connected by a link. The weight of the tongue *A* may serve to hold both tongues closed, or a spring may be employed.

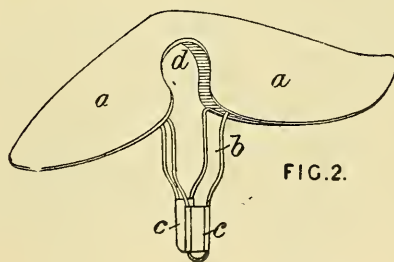
16,229. Liggins, E. Aug. 9.

Tugs, shaft.—The body of the tug is formed of a steel or other metal foundation covered over with leather *l* stitched on with the stitches preferably sunk below the surface so as to escape wear. The foundation consists of a metal strip *a* with overlapping ends riveted down.

The buckle tongue *b*² passes through holes in the strip, and the buckle bar *b*¹ is fixed between the strip *a* and a short curved strip *c* riveted in place. The loops *d* may be kept in place by arches *a*¹, *a*⁵ formed on the strip *a*, or by blocks of leather. The strip *a* may make more than one complete circle.



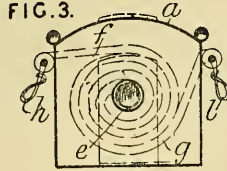
16,291. Burcher, W. H., and Stelling, G. H. Aug. 10.



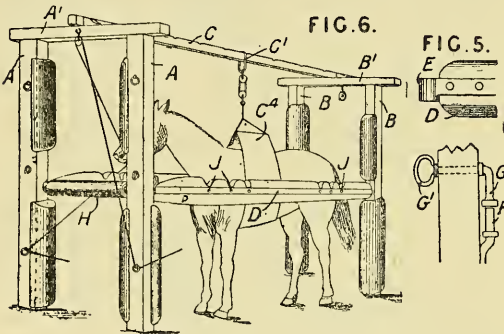
Sun screens.—A piece of fabric *a* with openings *d* for the animal's ears is held extended by a wire frame *b*, the lower ends of which are fitted into metal clamps *c* by which the screen is attached to brackets or slotted pieces &c. fixed to the bridle.

16,860. Schöning, K. Aug. 19.

Stopping runaway horses.—The horse is stopped by blind-folding it. Fig. 3 shows a horizontal section of the preferred form of apparatus. Two blinds *f*, *g* are wound upon a spring-actuated roller *e* in a casing *a* fixed to the bridle between the animal's eyes. The blinds are drawn out by cords attached at *h*, *l*.



16,863. Leach, E. H. Aug. 19.

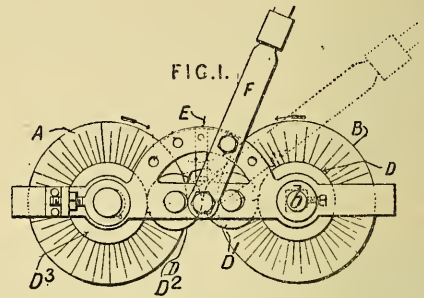


Animals, stocks for holding.—The stock consists of the uprights *A*, *A*, *B*, *B* united by the fixed cross-pieces *A'*, *B'*, *C* and by the movable thickly-padded rollers *H* and bars *D*. The pivots of the rollers *H* fit into inclined slots in the uprights, and the bars *D* carry loops *E* on their ends to fit over pins *F* on which they are held by pivoted pins *G* with handles *G'*. Padded cross-bars may be secured by pins through the holes *J*, and a padded bar for supporting the hind quarters of the animal may be hung by hooks upon the pivots of the rear roller *H*. A girth or sling *C'* is connected by tackle to a loop *C'* adjustable on the top bar *C*. Rings and loops for other tackle are arranged as shown. The animal is introduced at either side of the stock by removing either end of the bars *D*, *D*.

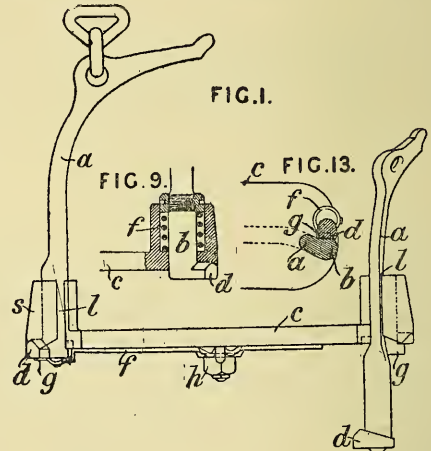
16,895. Sprague, R. H. Aug. 19.

Brushing-apparatus for grooming.—The apparatus consists of two brushes *A*, *B*, geared together by friction rollers *D*, *D*¹, *D*², *D*³ so as to rotate in opposite directions as shown by the arrows. The brush *A*, which is harder than the brush *B*, brushes out the dust &c. from the coat of the animal into the dust pan at *E*, and the brush *A* smooths the hair down again. The spindle *b* of the brush *B* is

connected by a flexible shaft to an electric or other motor. The apparatus is guided by an adjustable handle *F*.

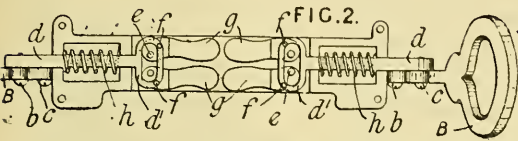


16,958. Rapp, J. Aug. 21.



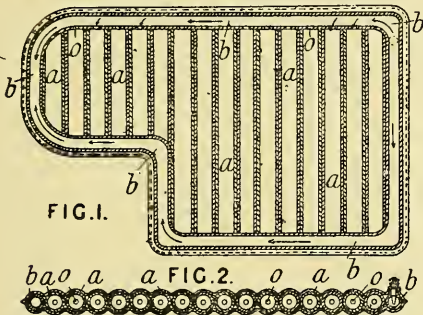
Stirrups.—The bow of a safety stirrup is in two parts *a*, *a* pivoted to the tread *c* or to uprights thereon. The bow is normally kept closed by a spring or springs, but opens to liberate the rider when his boot presses against the bow. In the form shown in Fig. 1, the spring *f* presses a V-shaped projection *d* on the bow into a notch in the socket *s*, which is slotted at *l* to enable the bow to be easily removed for cleaning purposes. The spring *f* is kept in place by a hook and a nut *h*. In the form shown in Fig. 9, the projection *d* is kept in place by a spiral spring *f*. In the form shown in Fig. 13, the end of a spiral spring *f* bears against a lug *d* on the bow *a*, which turns between pivots *b*. In all forms a stop *g* prevents the bow from moving in the wrong direction. The stirrup straps are suspended by rings. The Provisional Specification states that the arms of the bow may be secured by discs and springs.

17,170. Richter, H. Aug. 24.



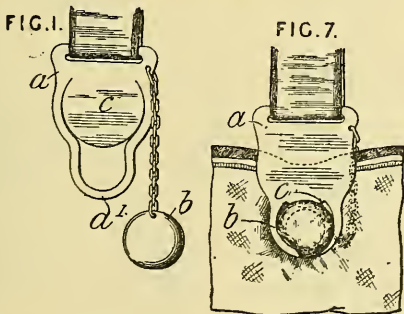
Bits; horse breaking and training harness.—Relates to an expanding bit for breaking-in and training horses. The levers *g* are pivoted at *f* within the bit, and are protruded on pulling the reins so as to press against the tongue and the roof of the mouth. The reins are attached to the looped ends of the levers *B*, which are pivoted at *b* to the casing of the bit and at *c* to rods *d*. These rods are pressed outwards by springs *h*, and are formed with loops *d*¹ to engage with the pins *e* or the levers *g*.

17,213. Richter, H. Aug. 24.



Saddles; pads for.—Pads for fixing beneath a riding saddle, one on each side of the saddle, consist of inflated rubber tubes *a* surrounded by another tube *b*, the whole being enclosed in a suitable covering. The tubes *a* may communicate through openings *o* with the tube *b*.

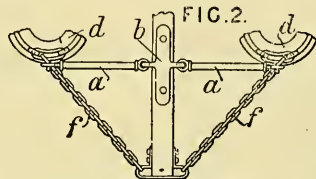
17,865. Chauvet, L. P. Sept. 4.



Fastening, couplings for. Relates to a fastening-device for traces and other harness straps, and for other purposes. Fig. 1 shows the application to a

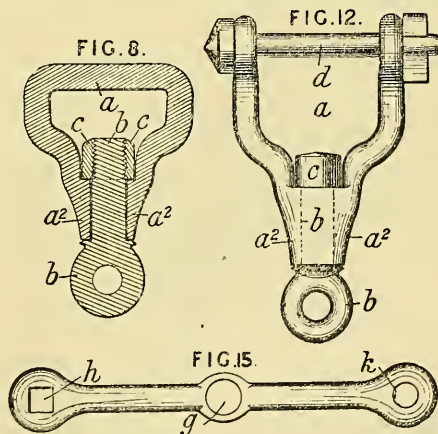
stocking suspender. A plate *a* secured to the suspending-strap is formed with an eye *a*¹ adapted to receive a button *b* secured to the plate by a chain, and with a tongue *c* of flexible material. To secure the fabric, the button is covered by the material and is then pressed into the opening *a*¹ so as to spring past the tongue *c*, which prevents it from returning. In securing traces &c., the parts *a* and *b* are attached to the parts to be secured and are sprung together. In a modification, shown in Fig. 7, the tongue *c* is rigid, the button being cut away at one part to allow of its insertion, a slight rotation preventing its withdrawal.

18,666. Brigg, T. H., and Walker, C. W. Sept. 15.



Fastening pole-chains. Relates to pole-end fittings for carriages, omnibuses, vans, and other vehicles. Fig. 2 shows a plan. The object is to cause the animals to exert their power in parallel planes. The arms *a* attached to the front of the collars *d* are connected to the fixed or adjustable carrier *b* by universal joints. Chains *f*, or straps, which may be adjustable, stay the collars to the pole end. In a modification, the arms *a* are adjustable in length.

18,984. Wheway, S. B. Sept. 20.



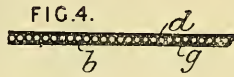
Fastening.—Swivels and swivelling shackles for harness, traces, &c. are made by stamping or stamping and bending, instead of by forging. In the form shown in Fig. 8, the bow *a* and boss *a*² are stamped from a thick iron &c. plate in the

heated state. The hole for the eye-bolt *b* is then drilled, and the bolt is secured in place by riveting on a plain or a screwed nut *c*, or by forming the part *c* in a piece with the bolt and forming the eye from the shank after it has been passed through the bow *a*. In the form shown in Fig. 12, a blank like that shown in Fig. 15 is first stamped, the hole *g* is then formed (if not formed during the stamping), the holes *h*, *k* are next made, and the blank is then bent to Y form. The pin *d* may be fixed by a cottar or nut &c., and the bolt *b* is secured as in the previous form.

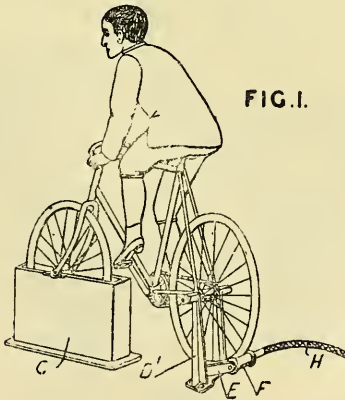
19,335. Harris, J. J., and Toft, E. Sept. 26.

Saddles; lining and padding; ventilation.—

Relates to an elastic layer to absorb shocks and give ventilation. The layer is composed of rubber &c. in the form of open-ended tubes or a corrugated sheet forming air chambers, channels, and passages. It may be fixed in position by sewing or cement so as to form part of a riding saddle, and may be interposed between the saddle and either the horse or the rider. The layer *b*, Fig. 4, may also be enclosed between two sheets of fabric *d*, *g* to form a compound sheet for use with a riding saddle. Holes may be formed from face to face for drainage purposes.



19,546. Stewart, J. K. Sept. 28.

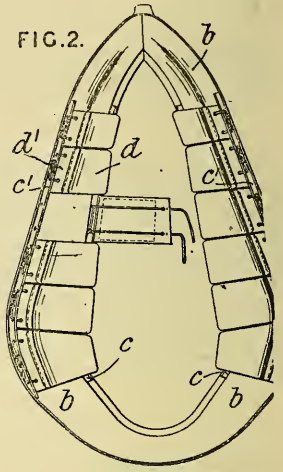


Horse clippers and the like.—Relates to a device for allowing a bicycle to be used as a motor for driving light tools such as horse clippers or shearing-tools. The front wheel is placed in a box *C*, while the rear axle rests on the top of standards *D*¹, and bears on a roller *F* carried on a spring arm *E* and connected by flexible shafting *H*¹ to the tool to be driven.

19,592. Gidden, R. T. Sept. 29.

Collars, neck; saddles; lining and padding; pads for.

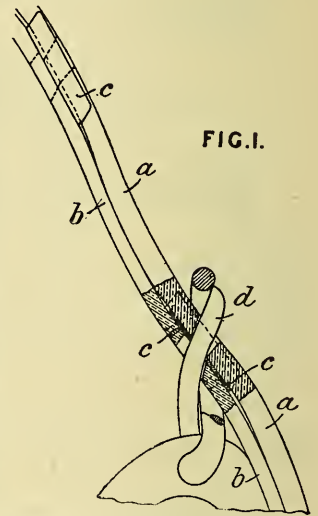
—The part of a horse-collar, pad, or saddle which bears on the animal is made of a series of detachable pads, so that any one of them may be removed to avoid pressure on a sore place. A better fit is also obtained, as the pads are made in different thicknesses. Fig. 2 shows the rear side of a collar in which the pads *d* are attached by lacing the leather backs *d*¹ to leather &c. flanges or strips *c*, *c*¹ fixed to the afterwale *b*.



19,874. Wilson, G. Oct. 4.

Backbands; fastening.—

The lower part of the backband is in two parts *a*, *b*, which are not stitched together. The strap *b* has riveted to it metal plates or washers *c* for the tongue *d* of the shaft-tug buckle. The washers may be flanged to embrace the strap *a*. The buckle holes may be arranged so that the greatest strain comes on the strap *b*. The outer strap *a* may be in two thicknesses.



20,381. Young, J. Oct. 11.

Breeching; fastening.—The breeching strap *A* is attached to the kicking-strap loops *F* by loops *B* formed by bending back the strap *D* and riveting it. A metal liner is inserted at *C*, and secured by rivets *E*, *E*¹.

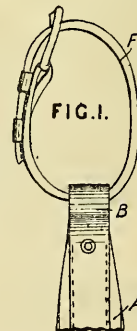
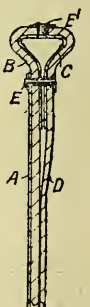
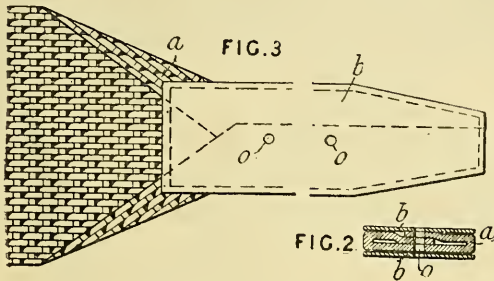


FIG. 3.



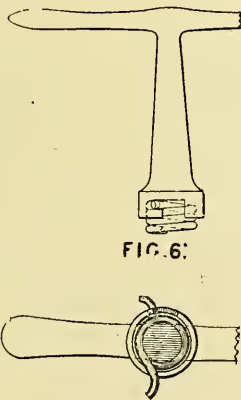
20,857. **Kratz, O. C. J.** Oct. 18.



Materials; clothing for animals; saddles; halters.—Body belts, girths, rollers for horse clothing, and the like are made of jute or hemp by plaiting or weaving. The belts may be used for halters. The buckle end *a* is folded over as shown, and provided with holes if required. The end may be strengthened by one or more strips of leather *b* with holes *o*.

22,121. **Brown, C.** Nov. 6.

Horse clippers and the like.—A key is provided for removing and replacing the springs of toilet clippers. Figs. 5 and 6 show an elevation and an upturned plan of the key holding the spring ready for insertion into the clippers.



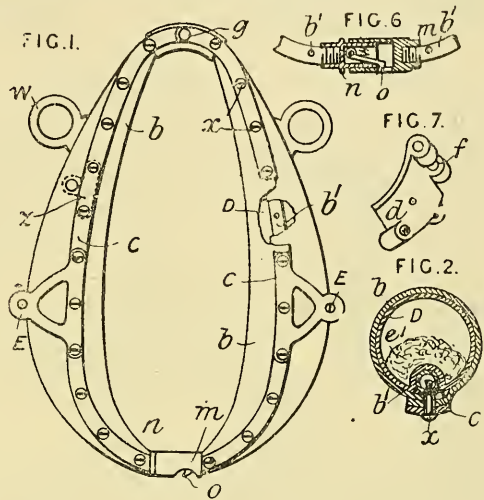
23,307. **Crocker, E. K.** Nov. 22.

Bits; bridles.—Restive or vicious horses are controlled by a device consisting of a hinged bit *a* fastened to the reins by rings *b* and supported in the mouth by metal pieces *d* buckled to the noseband *e* shaped as shown. The pieces *d* may be twisted and have a special section across the eye *d*². The noseband is supported by a forked face strap *h*. On pulling the reins, the



joint *a*¹ presses against the roof of the mouth, the pieces *d* move inwards and press on the cheeks, and the noseband presses on the nose.

24,232. **Brooke, F. R.** Dec. 5.

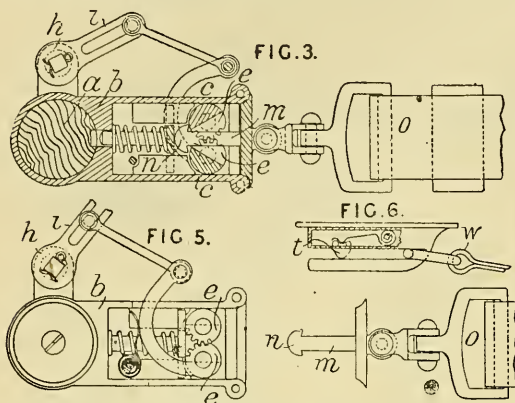


Collars, neck; fastening; padding.—A hinged collar consists of a metal frame, a leather cover, and inflated pads enclosed in the cover. The frame consists of flat metal bars *C* hinged at *g* and connected by screws *x* to metal tubes *b*¹. The bars *C* and tubes *b*¹ are respectively outside and inside the cover *b* through which the screws *x* pass. These screws also serve to fix the draught-eyes *E*, terrets *w*, and plates *z* for supporting the inflating-valve for the inner pad *D*. Padding is arranged at *e*¹, so that, if the pad *D* becomes deflated, the metal frame will not press directly against the animal. The tubes *b*¹ are connected at the top by plates *d* with eyes *f* for the pin *g*, and are connected at the bottom by a coupling consisting of tubular pieces *n, m* which fit into one another, the piece *n* carrying a hook *o* which snaps into a hole in the other piece. The tubes *b*¹ screw into the top hinge and bottom tubular pieces. The top of the hinge is fitted in with a block of wood curved to the shape of the collar.

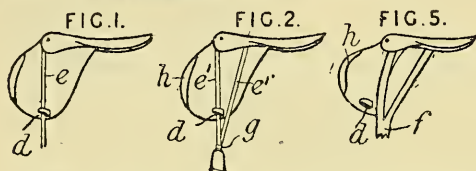
25,298. **Edwards, E.,** [*Kuzmink, A.*] Dec. 20.

Fastening traces &c. Each end of the splinter-bar *a* has a casing *b*, in which is retained by the catches *c* the hook end *n* of the bolt *m*, which is connected to the trace *o* by a universal joint. On elevating the arm *i* by the rotation of the shaft *h*, the teeth *e* cause the catches *c* to partially rotate and release the bolt *m*. The holder *w* at the pole

end is prevented from being accidentally released by the spring-pressed plate *t*.



25,611. Staunton, P. M. Dec. 28.

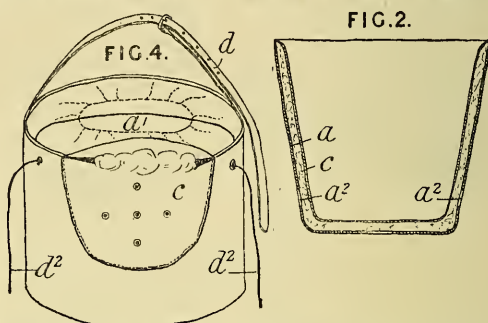


Saddles; pads for; stirrup leathers, suspending.—Relates to racing, polo, military, &c. saddles, and the object is to prevent the rider's legs from swinging. The calf of the leg bears against a crutch or pad *d* or is strapped to the saddle. This crutch may be placed on the saddle or on the surcingle. The surcingle may be forked and attached as shown at *f*, Fig. 5. The stirrup leather *e* may hang in front of or behind the crutch, or the stirrup may be firmly attached by a clip *g* to two stirrup leathers *e'*. The flaps, which may have knee rolls *h*, may project forward and be cut away at the back as shown in Fig. 5. The flaps and pads may be dispensed with. The rider's legs may also be kept from swinging by supporting them between the ordinary knee rolls, which act as a back support, and other knee rolls attached to the saddle cloth &c.

25,728. Kingscote, E., and Brudenell-Bruce, Lord F. Dec. 30.

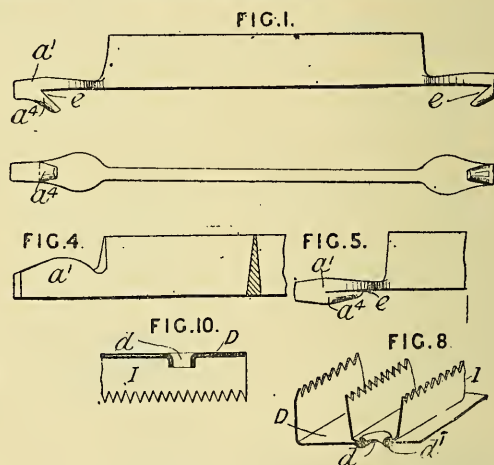
Nosebags.—Horses and other animals are protected from such ailments as horse-sickness by securing over their noses and mouths a mask or bag such as is shown in Fig. 2, consisting of an outer layer *a* formed with air-holes *a'* covered by layers of antiseptic wool or the like. The wool may form a continuous lining, or may be only

provided over the openings *a'*. Fig. 4 shows a nosebag formed with a perforated pocket containing wool and with a flexible covering *a'* which can be drawn so as to fit the animal's face tightly



by means of a cord *d'*. Straps *d* are provided to secure the appliance in place. The appliance may be made of waterproof fabric, so as to serve as a bucket &c.

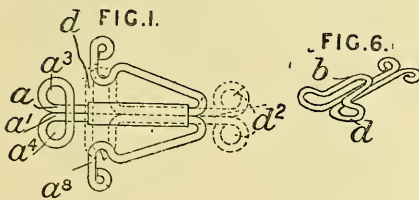
25,771. Tildesley, W. H. Dec. 30.



Currycombs.—Relates to forming knocker bars and fixing the blades and knocker bars to the back plate. The finished knocker bar shown in Fig. 1 is made from the blank partly shown in Fig. 4 by stamping in dies, the ends *a'*, Fig. 4, being brought to the form shown in Fig. 5. A cut is then made at *e*, and the part *a'* opened out. The blades *I*, Fig. 10, or knocker bars, are fixed to the base-plate *D* by piercing a hole *d* through both parts and then turning over the edges, as shown in Fig. 8, by a punch which passes through the hole *d* and enters a socket in the anvil. The punch and anvil have annular recesses for the turned-over metal *d'*.

A.D. 1900.

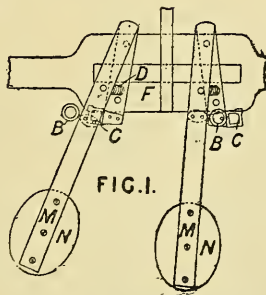
120. **Lake, H. H.**, [Pearson, J. E.]. Jan. 2.



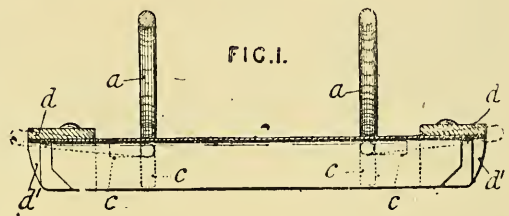
Fastening.—Fig. 1 shows a hook-and-eye fastening adapted for securing horse blankets &c. It consists of a wire bent at the middle, forming loops a^3 , a^4 , by which it is stitched to the garment, the wire extending forward to form a double shank a , a^1 , and then turning outward and rearward, to form loops a^5 as shown. The parts of the shank a , a^1 may be secured together by a sleeve, as shown, or by twisting them together; in the latter case two wires may be used. In a modification, the loops a^3 , a^4 are replaced by a single loop, and the parts a , a^1 are not secured together. The dotted lines indicate one form of eye, in which a loop d is sprung into the loops a^5 , the eye being secured to the garment by loops d^2 . In a modification, shown in FIG. 6, a tongue b formed on the loop d engages the shank, and keeps the parts in alignment.

145. **Tabernero, A.** Jan. 2.

Stopping runaway horses.—The horse is stopped by closing its nostrils by means of pads N carried on spring arms M bent back and riveted to the noseband F . The arms are pulled down against the action of spiral springs D , by means of cords attached to rings B and passing through loops C to the rider or driver.



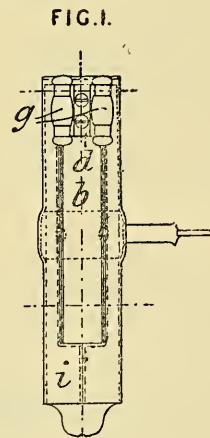
152. **Franke, C. R.** Jan. 2.



Currycombs.—The bow handles a are made to fold outwards and downwards for convenience in packing. The pivoted ends c of the handles are bent at a right-angle to form stops. The ends of the currycomb are protected by plates d , the ends d^1 of which receive the blows when the currycomb is being cleaned by knocking it.

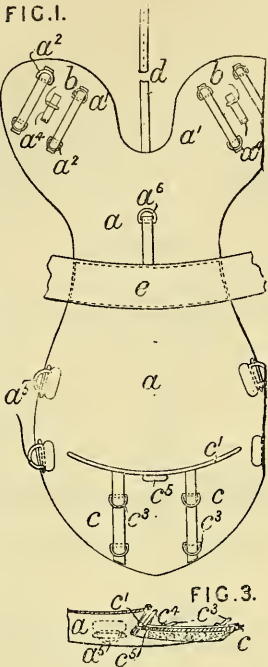
163. **Jenks, A. E.** Jan. 3.

Whip sockets.—The socket has a lateral opening at b through which the whip handle can be pressed. The whip, therefore, has to be lifted only over the front part i to remove it, and is not damaged if it strikes against any obstacle, such as a low archway. A horse-shoe shaped spring d , with anti-friction rollers g at the ends, prevents the whip from falling out, but gives way to slight pressure.



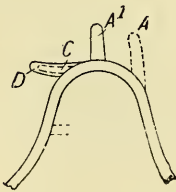
468. Scott, J. Jan. 8.

Saddles.—A hunting or other saddle is converted into a military saddle by means of a leather or canvas &c. cover *a* carrying a number of loops or dees &c. *a*², *a*⁶, *a*⁵, *c*³ for the attachment of the wallet, saddle bag, carbine bucket, valise, &c. The cover has front flaps *a*¹, which may be quilted and stiffened, and may be held down by arms fastened to the saddle-bars or by loops *b* which pass through slots in the cover and are fastened by tabs *a*⁴. The cover has a rear extension *c* padded to bear on the horse. The front *c*¹ of this extension bears against the rear of the saddle, and keeps the cover in place, as do also the loops *b*, a surcingle *e*, and a strap *d*. This strap passes beneath the saddle and then through the slot *c*⁵, where it is secured to the buckle *c*⁴.



579. Carter, J. Jan. 10.

Saddles.—The near and off side heads of a lady's saddle are altered from their usual position *A*, *C* to the new position *A*¹, *D*. By thus placing them more to the off side, the weight of the rider is better distributed.

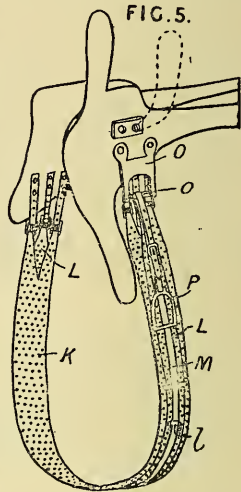


704. McGaffrey, J. Jan. 11.

Saddles; stirrup straps, suspending; ventilation; lining and padding.—Relates to riding, harness, pack, and other saddles. Fig. 3 shows a section across a riding saddle, and Fig. 5 shows the girth and stirrup leather attachments for a lady's saddle. The leather flaps where they bear against the horse and the whole of the covering of the pads *D* of leather, serge, linen, &c.

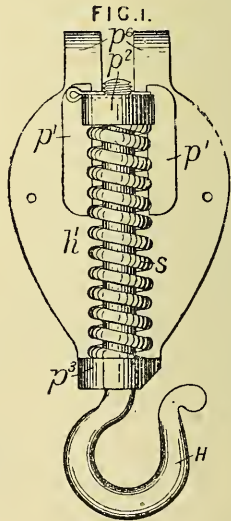


are perforated for ventilation. Ventilating-spaces are also left at *E* and *H*. The padding *F*, preferably of horse-hair, is enclosed in a widely-woven fabric *G* of linen, hair, &c., so that an awl may be introduced through the ventilating-holes and the fabric to tease out the padding *F* if it has become lumpy. Ventilating-spaces are left at *G*¹, *G*¹ between the fabric *G* and the outer covering. The edges of the pad *D* and of the flaps and girth are turned over and made flush, so as to prevent chafing the animal. The girth, composed of a broad under strap *K* and narrow over strap *L* connected to it by loops, is also perforated for ventilation. The stirrup strap *M* is attached by a buckled strap to a metal loop on the off-side of the tree, and passes through antifriction loops *l* fixed to the strap *L* by an overlying strap sewn to it. The stirrup strap also passes over a roller *o* on a loop *O* on the near-side of the tree, and is then buckled to the stirrup *P*. The stirrup strap may be adjusted at either end.

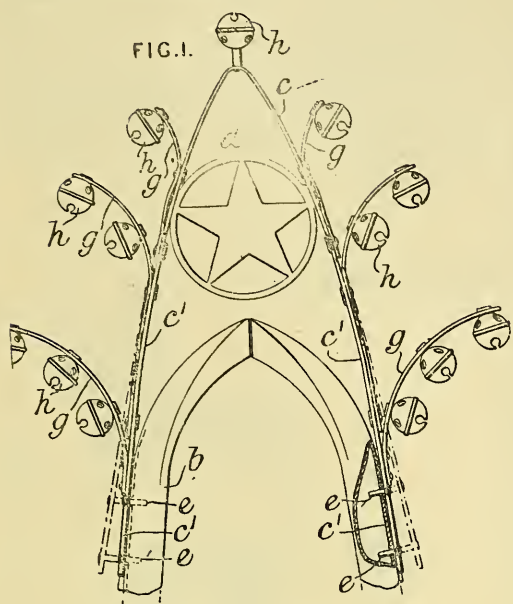


739. Marsh, T. P., and McDougall, J. Jan. 12.

Fastening.—Relates to a spring attachment or hook for connecting the traces to a horse-collar. The shank *h*¹ of the hook proper *H* passes freely through a lug *p*³ on the plate shown, and is screwed and pinned to a block *p*² sliding between guiding-lugs *p*¹ on the plate. A spiral spring *S* is placed on the shank between the parts *p*², *p*³. The plate may be fixed to the collar described in Specification No. 1486, A.D. 1898, by a bolt passing through lugs *p*⁶ and other lugs fixed to the forewale.



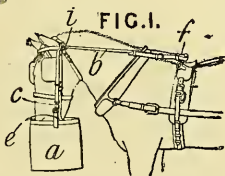
1149. Gulline, H. L. Jan 18.



Collars, neck, attachments for. Bells *h* or ornaments are carried on strips *g* branching from the spring bow *c*, *c'* braced at the top by a star &c. *d* and fixed to the collar *b* by pins *e* fitting into sockets.

1471. Sangster, T. H. Jan. 23.

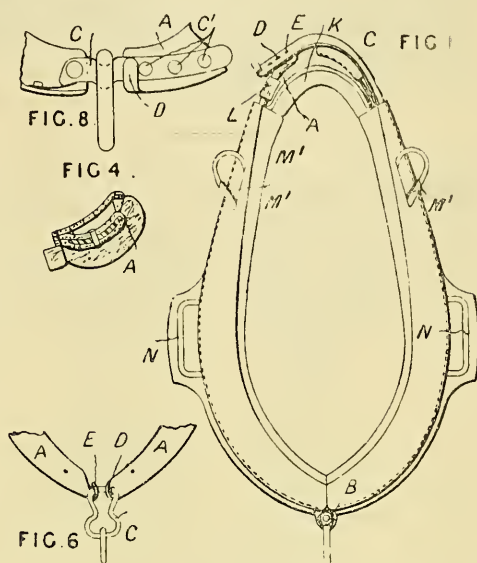
Nosebags, suspending. A separate strap or rein *b* is attached by an adjustable loop *f* to the harness saddle and, after passing through loops *i* on the bridle, is attached by hooks *c* to rings on the short straps *e* of the nosebag *a*. When the horse lowers its head, its mouth enters the bag. When the bag is not in use, the hooks *c* are connected to the loops *i*.



1821. Thomson, E. Jan. 29.

Collars, neck; fastening.—The collar consists of two metal bars or plates *A*, which are suitably covered with leather and padded as shown in Fig. 4, and are hinged together at the lower end *B* if for single harness and at the upper end if for double harness. The other end is fastened by a strip *C*, Fig. 1, with holes *D* for a pin *E*, or by a link *C*, Fig. 6, connecting an eye *D* and hook *E*, or by a bar *C*, Fig. 8, hinged at one end and provided with studs *C'* to engage with a hook *D*. The traces are attached to plain or twisted loops *N*, and the reins run through snap-hooks *M'* or rings. In

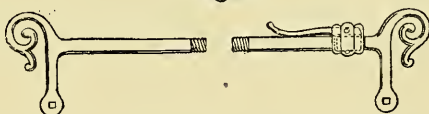
collars fastened at the top, a removable pad *K* is attached to one of the bars *A* by a loop *L*. In



collars fastened at the bottom, the reins need not be detached from the collar in changing horses.

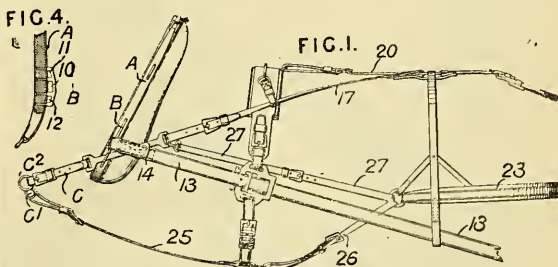
2241. Green, H. Feb. 5.

FIG. A.



Rein-holders comprise spring plates carried by ferules pinned to the rein rails as shown.

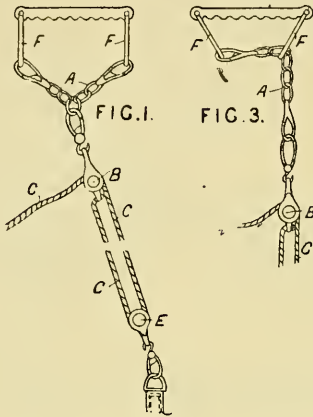
2792. Olsen, C. B. Feb. 12.



Harnessing, systems of; collars, neck. — The hames *A* are formed with loops *B*, and the traces 13 are attached to either of the sections 10, 11, 12.

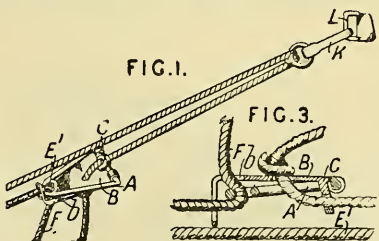
The breast strap C, passing through the ring C² on the neck yoke C¹, is attached to bars 14 which slide through the loops B. The bars 14 are also attached to straps 17, 27 connected respectively to the back strap 20 and the breeching 23. Straps 26 connect the breeching to the martingale 25, which is looped round the neck yoke C¹.

2924. Chettle, T. Feb. 14.



Controlling restive horses; bridles, reins for. Relates to an additional rein for controlling stallions when serving mares or otherwise. The rein C is attached to one of the pulleys B, E, and passes through both of them on the off-side of the animal. The pulley E is attached to the body roller, surcingle, or crupper, and the pulley B is attached to a chain A, which is either attached to both bit rings F, as shown in Fig. 1, or is attached to one ring and passes through the other, as shown in Fig. 3. The end of the rein C may be passed through the rings F after leaving the lower pulley.

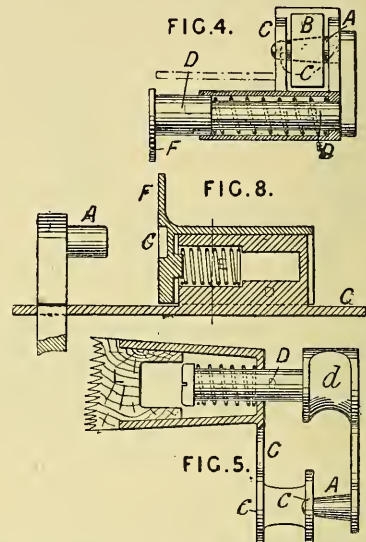
3172. Wallace, J. H. Feb. 17.



Bridles; hobbles; justening — A rope grip adapted for snaffling or hobbling a horse, and for other purposes, is shown in Fig. 1 as used for snaffling a horse. A triangular plate B is hinged to a frame A, and the knotted end of a rope E¹ is

passed through holes in the plate and in a projection C, Fig. 3. The rope is then passed through a ring connected by a hook K to an L-shaped hook fastening L on the saddle and through the ring of a corresponding hook attached to the bit, and the free end F is passed through an aperture in the frame A and a notch b in the plate B, which grips the rope. The hook fastening L is replaced by a suitable device when the appliance is used for other purposes.

3279. Walley, J. S. Feb. 19.

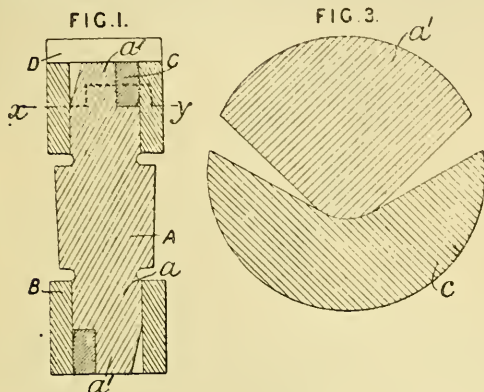


Fastening.—The end of the trace B, Fig. 4, is secured by the stud A passing through slots c in the frame C attached to the draw-bar or shaft. By pressing in the plate F of the spring bolt D, the trace is released. In a modification, shown in Fig. 5 and suitable for attachment to whipple-trees, the trace is freed by pulling the plate d, while Fig. 8 shows a form in which the plate F is pushed back to allow the trace to be placed over or released from the fixed pin A.

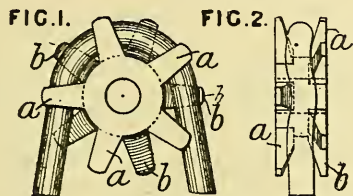
3444. Newall, J. W. Feb. 21.

Horse clippers and the like.—Relates to the pivot pin A for the eye of the vibrating lever which actuates the cutter. The side thrust is taken by the reduced part a bearing against the bush B fixed to the shear body. The end thrust is taken by the washer D, and the thrust in a plane at right angles to the direction of the side thrust is taken by pieces C of crescent section as shown in Fig. 3, which is a section on x-y, Fig. 1. The part a¹ of the pivot pin is reduced, and has a somewhat triangular section, the rounded apex of the triangle

bearing against the piece C, which is rounded in vertical section so as to adjust itself to the bearing-edge of the part a^1 .



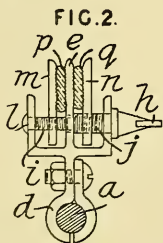
3507. **Barton, W. W.** Feb. 22.



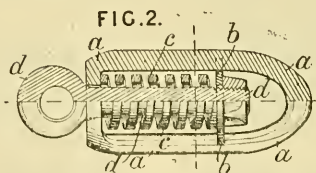
Horse clippers and the like.—Relates to driving-pulleys for tackle for supporting the flexible shafts of horse-clipping and sheep-shearing machines. The pulley is formed with teeth a, b which alternate as shown, so as to bend the flexible cord and thus increase its adhesion. The pulley may be in one piece, or built up of two sheet-metal discs. The Provisional Specification describes the complete tackle for suspending the clipper &c. The tackle consists of an inverted L-shaped frame supported by chains and supporting a forked piece in which the driving-pulley with cranked handle is journaled. A second pulley is connected to the flexible shaft, and is supported in a bracket connected to the L-shaped frame and to an arm connected to the forked piece above mentioned.

3538. **Goetze, W.** Feb. 22.

Rein-holders.—The reins p, q are held between the fixed plate e and the movable plates m, n , which are moved together or apart by a right and left handed thumb-screw h, i, j, l . The plate e forms part of the support d , which is clamped to the seat rail &c. a .



3797. **Marsh, T. P.** Feb. 27.

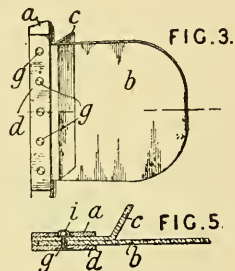


Fastening.—Relates to spring swivels for tug-chains, traces, backbands, bellybands, breechbands, and other parts of harness, halter chains, dog chains, &c. The swivel consists of a link a , an eye-bolt d , a guide-washer b , and a spring c . The end of the link a may be widened to take a band, a rubber spring may be used instead of a coiled spring, and, instead of an eye, a hook-bolt may be used.

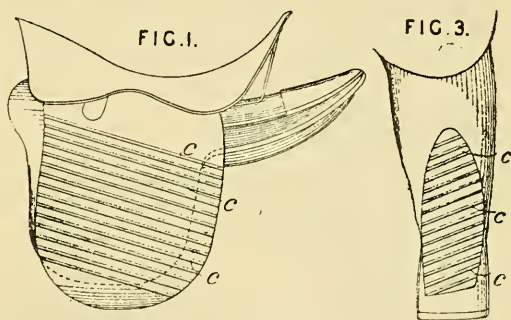
4197. **Diedrich, E.** March 5.

Bridles, blinkers for.

The blinker consists of a large plate b of transparent material, preferably celluloid, and a short bent plate c of opaque material, such as leather. The plates b, c may be removably attached to the cheek strap a by studs g fixed to the strap d passing through holes in the plates b, c and engaging with spring sockets i in the strap a . By this means different coloured plates b may be substituted for use in bright sunlight, or when snow covers the ground.



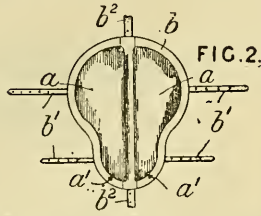
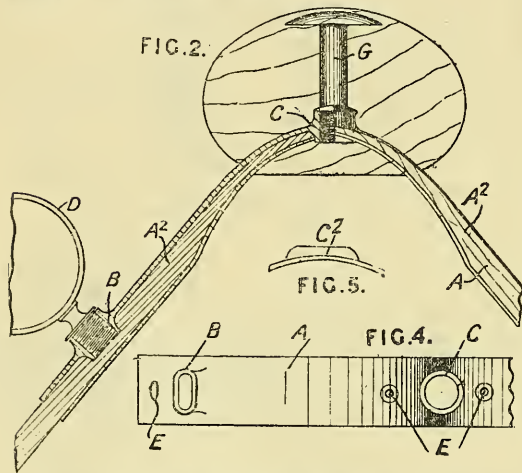
4344. **Verity, H.** March 7.



Saddles.—The flaps of the saddle and the knee parts of riding breeches are provided with interlocking ribs or projections c to secure a better seat. The stirrup straps may have corresponding ribs &c.

4396. Douglas, R. March 7.

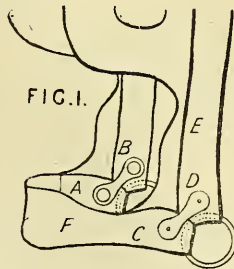
*Pads for riding and harness saddles, horse-collars, and other articles of harness and saddlery are made of inflated rubber cushions provided with suitable valves and fixed to a backing of leather, rubber, &c. with attaching-straps. Fig. 2 shows a pair of inflated pads *a* for a riding saddle. The valves and backing and attaching straps are shown at *a'*, *b* and *b'*, *b''* respectively. The straps *b'* pass through slits in the padded saddle flaps to buckles.*

**4581. Wincer, T.** March 10

Saddles.—Relates to gig saddle-tree plates. The metal plate *A* is formed with screw sockets *B*, *C* for the terrets *D* and hook *G*. There are holes at *E* for screws or rivets for fixing the plate to the tree *A2*. The plate may be in two or more parts. Fig. 5 shows a modified form of screw socket *C2*.

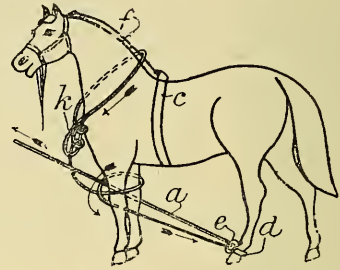
4642. Drewry, G. March 12.

Bridles.—The joint between the cheek strap *E* and noseband *F* is strengthened by metal plates *A*, *B*, *C*, *D* placed on each side of the straps and riveted through.

**4766. Blume, A.** March 13.

Throwing animals, harness for.—The tackle, for use in surgical operations &c., consists of a rope *a*

with a loop *k* at one end, padded bands *d* with rings *e*, a buckled girth *c*, and a cord *f* connected by rings to the bridle and girth as shown. For casting the animal on its left side, the rope *a* is



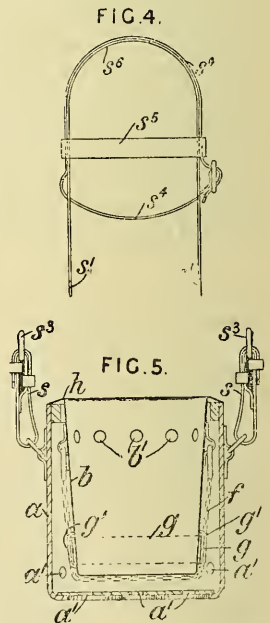
looped as shown and then pulled tight, and the animal is pulled down by a smart pull on the tail and halter. If necessary, the other hind fetlock or the front fetlocks also may be bound with cords.

4866. Soerensen, C. P., and Moeller, F. March 14.

Saddles.—Relates to means for preventing punctures in pneumatic saddles. A shaped strip of parchment leather is soaked in water, and is then stretched upon a frame of the same form as the saddle. After drying, the strip is placed between a canvas lining and the wearing-surface. In a modification, the air chamber of the saddle is formed of parchment leather.

5118. Peters, W. C. March 17.

Muzzles for animals; nosebags; clothing for animals.—Relates to a horse muzzle which may be used as an inhaler or respirator, a nosebag or a bucket, &c. The muzzle consists of an outer leather &c. case *a*, perforated at *a'*, and an inner rigid receptacle *b* of zinc &c. perforated at *b'*, flanged at *h*, and provided with a chain *f*. The air respired by the horse passes through the openings *a'*, *b'*, and becomes warmed by contact with the receptacle *b*. The air may be impregnated with a medicament by saturating a band *g* with the latter, the band being attached by loops *g'*. Food or a hot substance for



steaming the animal may be placed in the receptacle *b*. The receptacle may be taken out and used as a bucket, the chain *f* serving as handle. The muzzle is connected by straps *s* to buckles *s*³ for buckling to the ends *s*¹ of the headstraps shown in Fig. 4. These straps comprise the buckled strap *s*¹ passing over the head, the strap *s*⁵

passing in front of the head, and the inner strap *s*⁶ terminating at *s*¹. The muzzle may be combined with the hood of the horse clothing by slipping the mouth of the hood over the case *a* and attaching it by a strap passing through loops which are formed on the case *a* and project through slits in the hood.

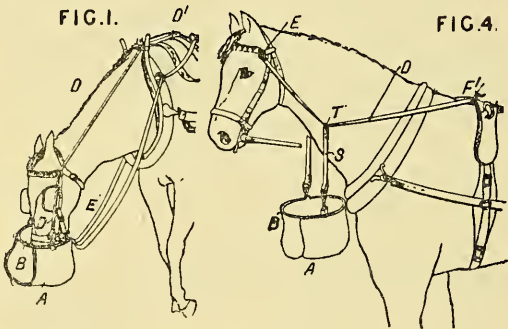
5202. Ashton, W. M. March 19.

Animals, appliances for holding; hobbles. — Relates to a hobble or device for holding sheep &c. during branding, castrating, or surgical operations upon the hoof &c. The device consists of a yoke 1 jointed or otherwise, extensions 2 bent to embrace the fore legs, and spring or other hooks 3 for holding apart the hind legs. Hooks or clips may be arranged at the points 2.



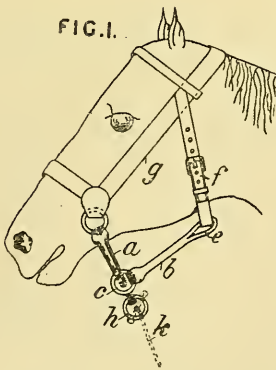
5522. Best, L. C. March 23.

Nosebags, suspending. The nosebag A, preferably kept open by a ring B, is attached to a strap D, Fig. 1, which passes through an eye &c. E on the bridle and is attached to some relatively fixed point D¹ on the saddle &c.; or, in the form shown in Fig. 4, the suspending-strap S has an eye T which slides on the strap D fixed at E to the bridle and at F¹ to the saddle &c. In either form, when the horse lowers its head its nose naturally enters the bag.

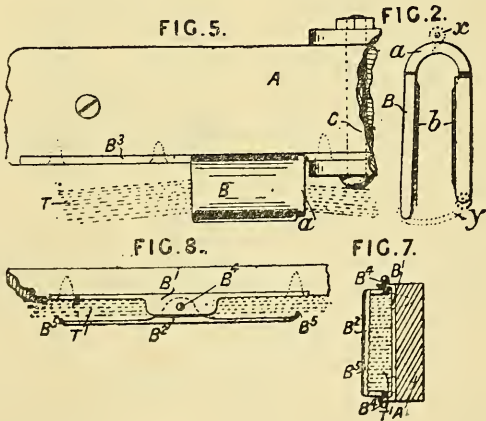


5615. Treu, P. von. March 26.

Halters.—The billet or gullet bar *b* has a loop *e* for the throat lash *f*, and is attached to a ring *c* which runs freely on the round chin strap *a*, and is swivelled to the ring *h* of the halter rope &c. *k*. By this means the halter is not pulled away when the animal moves its head, and the cheek strap *g* is not pushed against the eye.



traces are connected by clips of which two form are shown. Figs. 5 and 8 show plans of the clips and Figs. 2 and 7 side elevations. The clip B is



5680. Turner, S. G. March 27.

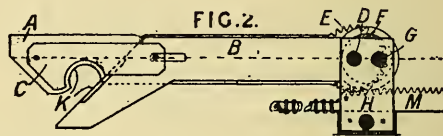
Fastening traces. In addition to the ordinary means of connecting traces to shafts and poles, the

fixed to the shaft A by a base-plate B³, and is roughened on its inner faces *b*, where the traces T come into contact with it. The clip B may be

hinged at *x*, and have a catch *y*. The end *a* may form a stop to hold the shafts when they are turned up on their hinge C. The clip B² is hinged at B⁴ to the base-plate B¹, and has inturned edges B⁵ to grip the trace T¹.

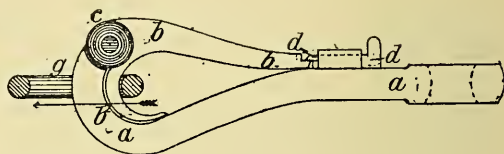
5689. Dalton, F. V. March 27.

Whips combined with wire-cutters. The wire is cut between two cutters K, K, one curved and the other straight, and each formed on a plate A, B. These plates are held together at one end by the plate C, and at the other by plates H. The plate A is pivoted on a pin D, and the plate B on an eccentric disc F kept from moving by the pins D, G. Thus, as the arms A, B are swung up, the jaws close. The arms are swung up by a rack M engaging with teeth E on the end of the plate A. The jaws may be kept normally open by a spring, and a catch &c. may secure the apparatus when not required for use.



5866. Boyes, W. March 29.

Fastening.—Hooks for harness have a tongue *b* hinged at *c* to the body *a* and prolonged at *b*², where the pressure of the link *g* comes. Strain on the hook, therefore, tends to keep the tongue in its closed position. For additional security, a sliding bolt *d* is employed.



5868. Brown, W. March 29.

Nosebags.—The devices are for supporting nosebags from the shafts or pole while the horse is feeding. The bag B has a ring *e* attached by hooks and eyes *e*¹, *f*, Fig. 1, to bars *a* attached to the shafts A by socket plates *b* provided with holes *c* for studs *d* on the shafts. The parts *a* may be in one piece, or in two pieces hinged together and fixed to the shafts by hooks entering vertical sockets in the shafts. Figs. 5 and 6 show the device for pair-horse vehicles. The rims *e* have stays *h* with hooks *h*¹ for holes *g*² in the plate *g* fixed to the pole P. The pole-chains are fixed in the holes *g*³.

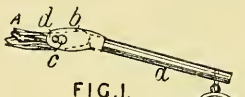


FIG. 1.

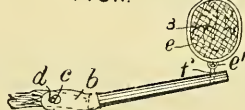


FIG. 5.

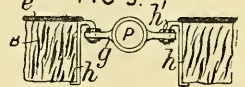
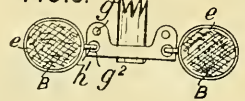


FIG. 6.



the saddle respectively. The seat is formed by crossed leathers *c*, *d* secured to the bows *a*, *b*, and by transverse strips *g* which lie above the

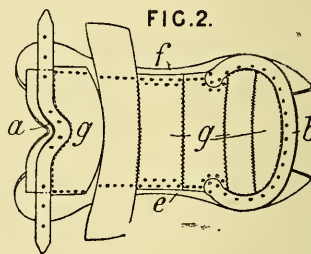


FIG. 2.

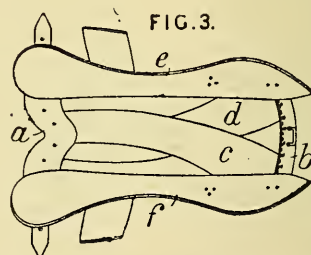


FIG. 3.

leathers *c*, *d* and are secured to the bows and to the side bars *e*, *f*.

6027. Golby, F. W., [Käding, C.] March 31.

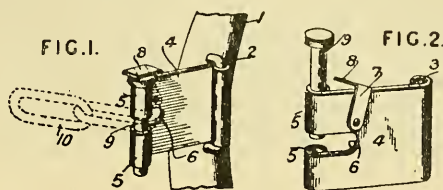
Saddles.—Relates especially to so-called hussar or Hungarian saddles with iron or steel bows. Figs. 2 and 3 show the upper and lower sides of

6292. Russell, J. F. April 4.

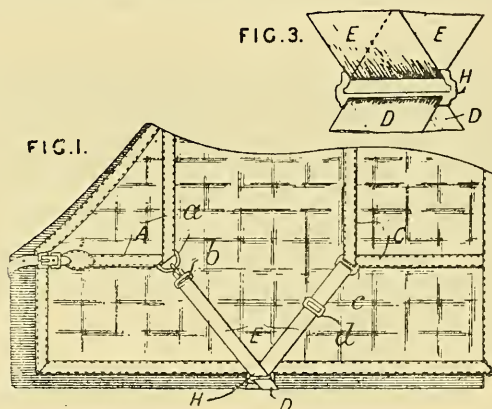
Materials.—Traces &c. are strengthened by catgut arranged longitudinally between the layers of leather.

6474. Adkins, W. W. April 6.

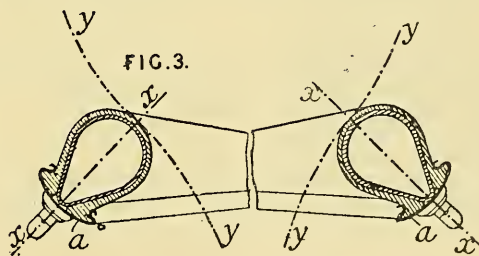
Fastening traces to hames. The trace 10 is removably attached to the hame 1 by a pin or bolt 9, which slides in the turned-over ends 5 of a slotted plate 4 attached to a staple 2 on the hame by its turned-over end 3. The trace enters the slot 6 in the plate 4. The pin 9 is kept in locked position by a pivoted keeper 7, the end 8 of which comes over the head of the pin.

**7064. Brookes, A. G.,** [Chase & Co., L. C.]. April 17.

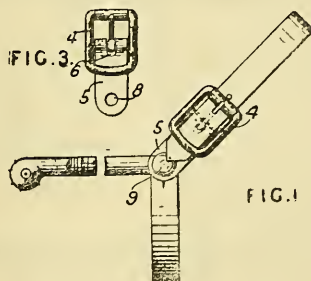
Clothing for animals.—On each side of the blanket and at the front and rear are stays A, C forming a right-angle, at the point of which is a single or double loop *a, c*. The loops *a, c* on one side are united by a surcingle E, and those on the other side by a surcingle D, the surcingle being united by a sliding loop H. One of the surcingles has a detachable fastening, such as a hook *b*, and one or each surcingle has an adjusting slide *d*. The double loop H has one opening large enough for the strap E to be readily passed right through.

**7183. Julien-Pinçon, C. E.** Jan. 22, [date applied for under Sec. 103 of Patents &c. Act, A.D. 1883].

Collars, neck.—The metal frame *a* is so curved laterally and longitudinally, and the padding is so attached that the line of pressure *x-x* perpendicular to the horse's neck *y-y* bisects the collar as shown, and thus prevents the padding from being dragged away from the frame. Pneumatic padding may be employed as shown.

**7345. Jackson, A. B.** April 20.

Spurs.—The buckle 4 is connected to the screw stud 9 on the bow of the spur by a doubled metal strip 5 with a hole 6 for the buckle tongue and holes 8 for the stud 9. The buckle may be nickel-plated or made of nickel-silver &c., and the strip 5 may be of aluminium.



7703. Gruggen, A. L. Sept. 26, A.D. 1899, [date applied for under Sec. 103 of Patents &c. Act, A.D. 1883].

Fastening neck yokes. Relates to means for coupling neck yokes to pole ends. The socket 9, riveted to the yoke 8, is slotted to receive the ball 10, connected by the neck 11 to the ball 12, which is seated in the socket *g* of the ferrule 16 attached to the end of the pole 8^a. The ball 10 is normally prevented from leaving the socket 9 by the pin 13, which can be turned so that the recess *e* allows the ball to be withdrawn through the slot *c*. In a modification, a ball 10^a, Fig. 5, is connected rigidly by the neck 11^a and ferrule 16^a to the pole end.

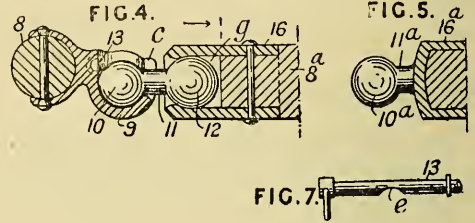
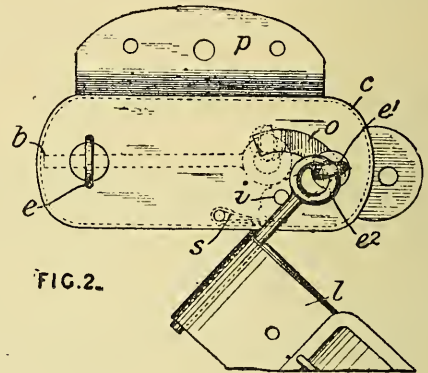


FIG. 7. 13
e

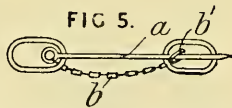
7771. Jones, C. D. M., [Jones, R. J.]. April 26.

Stirrup straps, suspending.—The stirrup strap *l* is suspended from a bar *b*, supported at one end by an eye *e* fixed to the plate *p*, and connected at the other end by an eye *e*² to another eye *e*¹ on a lever pivoted at *i* to the plate *p*, and held normally in an upright position by a spring *s*. A slot *o* in the casing *c* enables the eye *e*¹ to travel to and fro. The rear end of the bar *b* may be guided so as to move to and fro by any other means. If the rider is thrown, the bar *b* is drawn backwards, until free from the eye *e*, when the bar turns, as shown, and liberates the stirrup leather.



8065. Howard, G. D., [Brown, H. O.]. May 1.

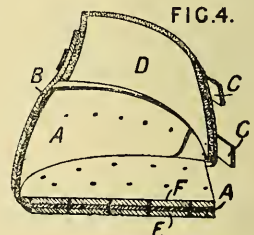
Fastening.—Relates to fastenings for chains, traces, pole-chains, and other articles. Fig. 5 shows a method of connecting or repairing chains, the chain *b* being threaded through the links and secured to the pin *a* as shown.



horse attempts to kick, the springs elongate and prevent damage.

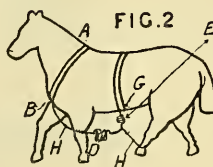
8819. Squire, J. W. May 12.

Horse - boots. — Boots for the use of horses when rolling or mowing lawns consist of a blocked part A with rounded edges, a sole E, and an upper B. The part A is secured to the parts E, B by rivets &c. A soft pad D of felt &c. is arranged as shown. The part E, as well as the inner sole F, may be of metal or of rubber. The boot is secured by straps C.



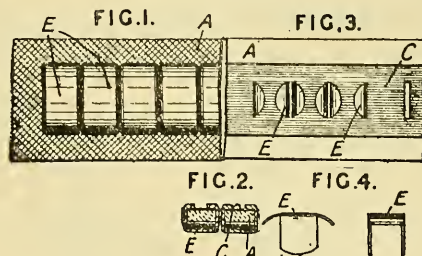
8173. Strachan, J. M. May 3.

Controlling restive horses.—One (or both) of the hind legs of a horse addicted to kicking is connected by a cord, chain, &c. H to the collar A, B or like part at the front of the animal. A strong spring D is placed in this cord, which is further supported by a second cord &c. attached to the bellyband &c. G and provided with a lighter spring E. If the



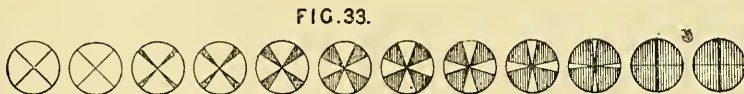
8899. Poppleton, T. May 15.

Bridles.—The front strap consists of a leather strap A and metal plate C united by staples E, the legs of which pass through coinciding slots in the parts A, C and are clinched. The front of the staples gives the ornamental chain-like appearance usual in bridle fronts.

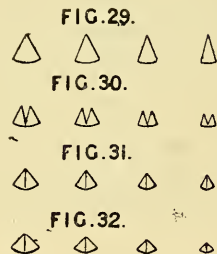
**8959. Pomeroy, J.** May 15.

Whips, making. The object is to cut up stalks of rattan, wood, &c. into tapering strips for making improved whips &c. There are two pairs of

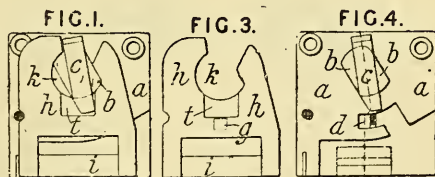
band saws, each pair cutting axial + -shaped cuts in the stalk. The two + -shaped cuts coincide for a certain distance as the material is fed, in order to form the butt of the whip &c., and then the two pairs of saws rotate through half a right-angle in opposite directions, thus cutting the stalk into eight tapering strips, four with their points at one end and four with their points at the other end. Fig. 33 shows sections taken at several points along the sawn-up stalk, the groups of strips being distinguished by shaded lines. Either group is trimmed to make the angle at the centre a right-angle, and is then bound together to form a complete whip &c. The same principle may be used for sawing or otherwise cutting the stalks into parts other than four.

**8960. Pomeroy, J.** May 15.

Whips, making. Relates to a method of and machine for shaping strips of rattan &c. for making whips &c. The strips are of taper form, and may be made in the machine described in Specification No. 8959, A.D. 1900. Fig. 29 shows sections taken at four different points along the length of a strip. The centre of the strip is first cut away as shown in Fig. 30, the halves are then pressed together as shown in Fig. 31, the sides are next trimmed so that the angle at the apex is a right-angle as shown in Fig. 32, and, lastly, four of such strips are bound together to form a tapering whip &c. of circular section.

**9143. Breiderhoff, O., and Voelker, A.** May 17.

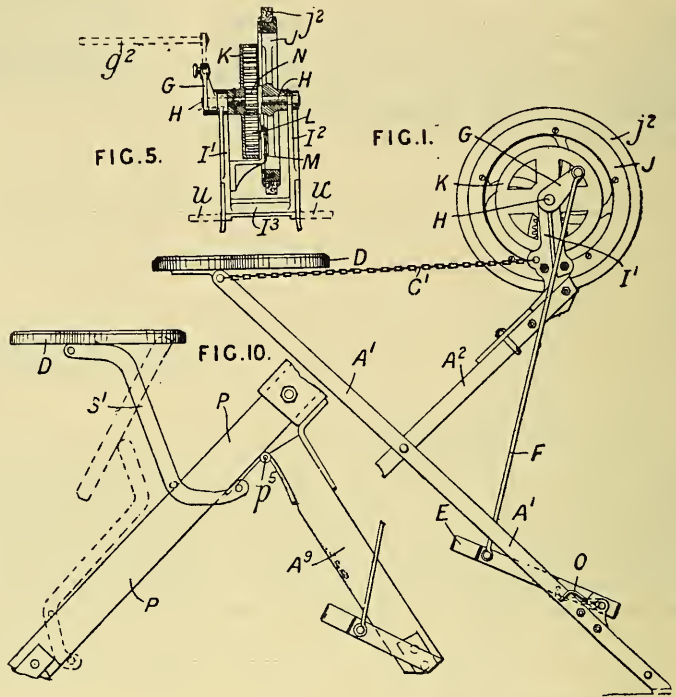
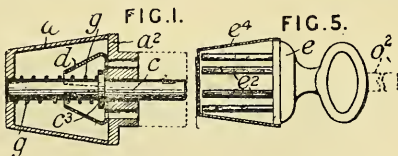
Stirrup straps, suspending.—The stirrup leather is attached to the bar *i* of a plate *h* provided with a gap *k*, a recess *t*, and a pin *g* fitting respectively a projection *b*, spring *c*, and bevelled edged recess *d* on and in a plate *a* fixed to the saddle. If the rider is thrown, the plate *h* is dragged sideways to the right, and is liberated from the supporting-plate *a*. The whole device may be covered by a cap to exclude dust &c.

**9225. Edwards, E., [Kluge, J.]** May 18.

Materials.—Girths are made from coarse waste cotton fibres, produced in the ordinary processes of cotton manufacture, treated with oil or grease.

9337. Bamford, J. May 21.

Horse clippers and the like.—Relates to portable hand or foot operated apparatus for sharpening purposes and for driving the flexible shafts of sheep-shearing machines &c. In the form shown in Fig. 1, the workman's seat D is pivoted to a folding framework A¹, A², formed like a camp stool. A chain C¹ keeps the parts rigid when in use. A treadle E, normally raised by a spring O, is pivoted to the leg A¹, and connected by a rod F to a crank G, Figs. 1 and 5, on a spindle H. An internally-toothed wheel K is also fixed to this spindle, and gears with a wheel L on the bracket M. The wheel gears with another wheel N fixed to the heavy wheel J and like it loose on the spindle H. The emery or other grinding-material j² is secured to the wheel J. The spindle and the gearing connected thereto are supported by brackets I¹, I² fixed to the legs A². In a modification, the seat and gearing are supported by approximately-vertical legs which are hinged to fold up and are kept from spreading, when in use, by crossed stays. The chain C¹ is replaced by an extension of the seat. In another modification, the seat D, Fig. 10, is hinged to and supported by arms S¹ from the leg P hinged at p² to the leg A². These single legs carry spread-out bases for bearing on the ground. When the apparatus is to be hand-driven, the legs &c. are dispensed with, the base I³, Fig. 5, is extended as at u, and a crank handle g² is attached to the spindle H. When the apparatus is for shearing sheep, the wheel K may be loose on the spindle H, and the wheel N and the flexible shaft fixed to it. Or a pulley on the spindle H may drive the clipper by a band &c.

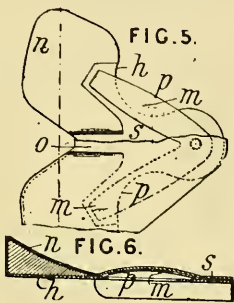
**9347. Pogson, A. D., and Johnson, J.** May 21.

Dog collars.—Relates to a lock or fastening for dog collars &c. A sliding bolt c, Fig. 1, controlled by a spring g, is disposed within a casing a provided with a cover-plate a². Spring catches d, which may be formed out of a steel plate, are fixed within the casing concentric with the bolt, and in the cover a² are formed holes corresponding with the catches. The lock is operated by pressing in the bolt until the spring catches engage the back of a collar &c. c³ on the bolt, and thus retain it in

the shot position. To release the bolt, a key e Fig. 5, provided with pegs or bits e² to engage the hole in the cover-plate, is inserted so that the spring catches are forced back sufficiently to allow the spring g to withdraw the bolt. A cover e⁴ is provided for the key when it is not in use. The bolt may be pressed into the locking position by a barrel piece o² on the key, in which case the cover-plate is extended so as to come flush with the end of the bolt when it is withdrawn. In another arrangement, the key has to be partially rotated after insertion, in order to bring the pegs into engagement with the catches. In a modification, one spring catch is made to engage a projection behind the collar, the key being provided with a short peg to correspond, thus presenting more difficulty in case of tampering with the lock.

9414. Platz, W. J. R., and Sperling, S. R. A. May 22.

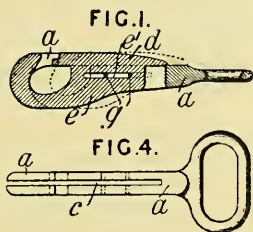
Saddles.—Relates to saddles especially for bicycles, but the invention is stated to be also applicable to riding saddles. The base-plate *h* is of the form shown, and is fitted with curved springs *m* on which the protuberances of the pelvis rest. The base is curved upwards or fitted with blocks *n* at the back, and is cut away at the sides *p* and back *o* to prevent injurious pressure. A leather cover *s* is fitted over the blocks *n* and springs &c.

**9664. Dollar, P.** May 25. *Drawings to Specification.*

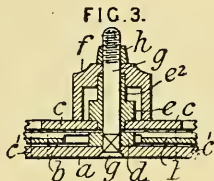
Halters.—Halter chains for securing animals in stables are fitted with connecting-straps or leather links which can be cut through by a knife in case of fire or emergency.

9897. Gavitt, J. A., and Tucker, P. M. May 29.

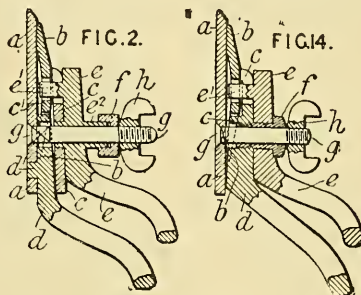
Fastening.—A hook for fastening harness &c. consists of two parts, the part *a*, Fig. 4, and the part *e*, Fig. 1. The part *a* has the form of two parallel hooks between which, in the space *c*, slides the part *e*, also hook-shaped. Pins *g* in a slot *e'* limit the movement. The part *e* is spread out at *d*, and roughened so that it may be operated by the thumb.

**10,107. Martin, A.,** [trading as Martin & Co., A.]. June 1.

Horse clippers and the like.—Figs. 2 and 3 show sections at right-angles to one another of one form of clipper. The parts are all held together by a single screw *g* and



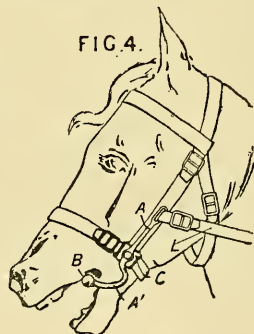
nut *h*. The screw is recessed in the lower cutter *a*, and passes through a hole in the fixed handle *d*, the end of which lies in a wide gap in the upper cutter *b*. The screw then passes through the



sleeve *e'* formed on the movable handle *e*, and after passing through a hole in the bridge-piece *f* engages with its nut *h*. The fixed handle *d* has a pin *d'* to enter a hole in the cutter *a*, and is thus held in place. The movable handle *e* has a pin *e'* to engage with a hole in the cutter *b* and thus vibrate it. The tension is adjusted as follows:—A pressure plate *c* bears on the cutter *b* and on the fixed handle *d*. The plate *c* is kept in place by a hole for the sleeve *e'*, and by pins *c'* which pass freely through slots in the cutter *b* and engage in holes in the cutter *a*. The bridge-piece *f* bears on the plate *c* as shown in Fig. 3. Thus, by tightening the nut *h*, the tension is increased without tightening the handle *e*. In the modification shown in Fig. 14, the pressure plate *c* is made in one piece with the fixed handle *d*, and the bridge-piece takes the form of a sleeve *f* screwing into the handle *d* and forming a bearing for the handle *e*.

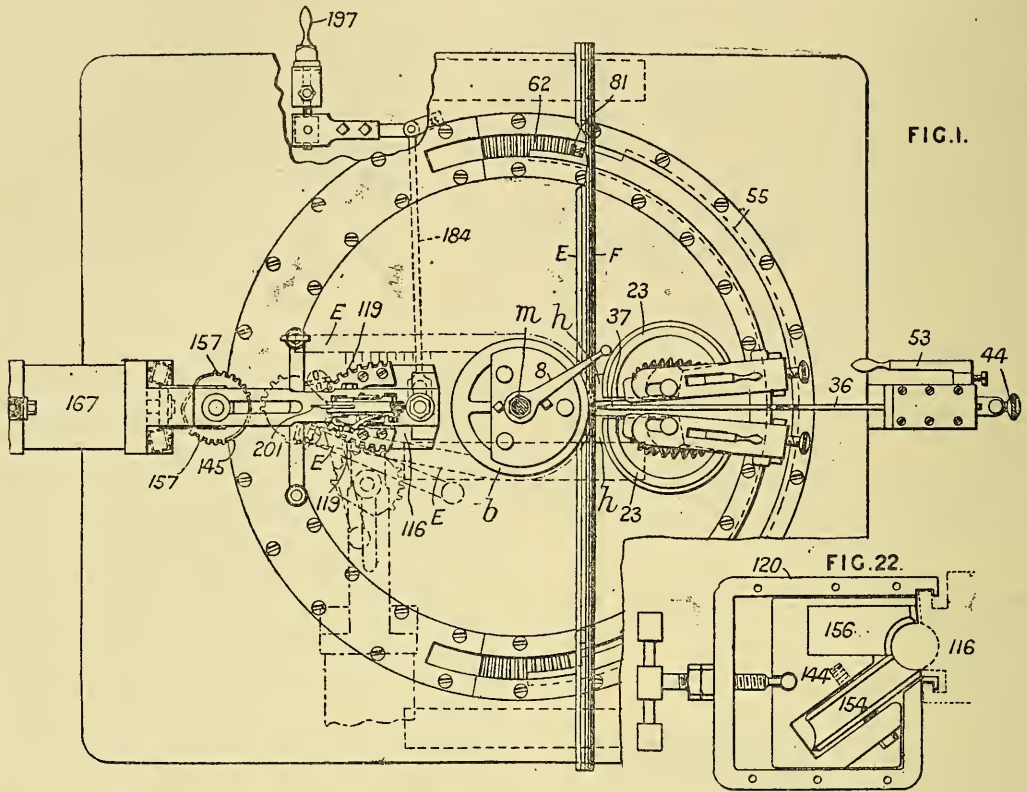
10,151. Bernard, P. L. June 1.

Bits.—The mouth-bar *B* passes on the upper jaw instead of on the lower jaw, as usual. The bar *B* is carried by the lower ends of the cheeks *A*, *A'*, which are pivoted in the centre to plates *C* and have slots at their upper ends for the reins *L*. The plates *C* have slots for the bridle straps as shown.

**10,702. Clark, A. M.,** [Gulline, H. L.] June 12.

Collars, neck.—Relates to machines for bending a flanged hollow or solid bar to form a horse-collar rim or like metal frame. Fig. 1 shows a plan of the machine. The box *E* with perforated

flange F is gripped against the circular anvil *b* by the jaw 37 on the clamping-rod 36, adjusted by a lever 53 actuating rack and pawl mechanism and by a screw 44. Pins on the jaw 37 enter holes in the bar and the anvil. The bar is then bent by the semicircular pieces 23, adjustably carried on arms *h*, which are centred at *m* and are moved apart by bevel-wheels 62 engaging with qua



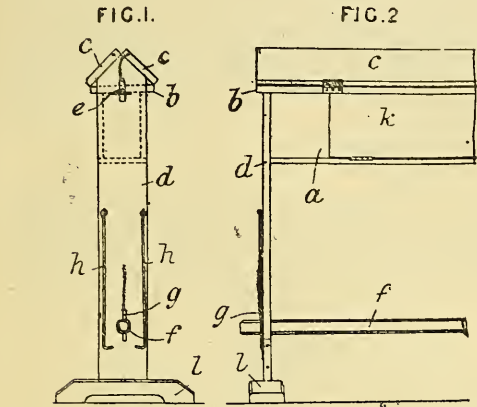
racks 55 fixed to the arms. The adjustment of the pieces 23 is similar to that of the rod 36. The bar E is thus bent on the anvil to form the throat portion of the collar. The anvil has a circular groove, and is in two parts, which unite at the groove. The counterweighted top part can be lifted off and clamped down by breech-screw mechanism actuated by the handle 8. The peak part of the collar is next formed by bending each end of the bar E separately upon the anvil 116, by the block 145 carried between arms pivoted to the central block of the peak anvil. The parts 116 are hinged to this block, and can be opened out by a handle operating a worm, worm-wheel nut, and right and left handed screws. Differently-shaped peaks can thus be formed. The block 145 is forced against the bar E by compressed air acting on a piston in the cylinder 167. While the block 145 of cam form is being moved round the anvil 116 it is rotated by gear teeth 157, 119. The peak anvil with the mechanism connected therewith can be moved towards or from the anvil *b* by a bell-crank lever 184 operated by the handle 197. The ends of the bar E projecting beyond the peak are cut off by a double-edged knife 201 carried by a lever handle. A filling-piece between the anvil parts 116 has a corresponding edge. In forming collar rims with bent back peaks, the parts 116 have a different form, and the bending is done by a block 156, Fig. 22, and roller 154 carried by an adjustable slide 144 in a case 120, which has flanges for engaging corresponding grooves in the parts 116. The cases 120 are actuated by rods connecting them to the arms *h* of the throat-forming mechanism. The machine is automatically reversed by a clutch actuated by the bolt 81 on one of the racks 55, and the machine is stopped when the racks get back to the position shown in Fig. 1.

10,776. Turle, H. G. June 13.

Stands for.—The saddle horse consists of a box or casing *a* supported on legs *d* and provided with a top board *b* to which the flaps *c* are hinged to turn up as shown. The flaps may be turned down level with the board *b*, and supported by struts *h* to form a table. The box *a* may have a hinged door *k*, and be used to contain military accoutrements &c. The legs *d* are kept apart by a bar *f*. The connection of the legs *d* with the case *a*, the bar *f*, and the feet *l* is made by pins such as *e*, *g*, so

that the saddle horse can be readily taken to pieces and packed up with the legs &c. on the

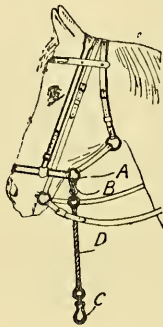
for hanging up the harness. The hook 4 has a spring tongue 11, which is opened by a bell-crank lever 9, 10. The arm 9 acts with a fixed arm 5 to form a clip, which may be held open by a projection 12, as shown in dotted lines. A second arm or bracket 13 is also used to support the harness, as shown in Fig. 1.



board *b*. The legs may be hinged to the board, or may consist of removable cross-pieces.

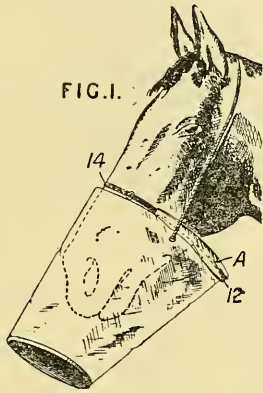
11,131. Winterton, T. June 19.

Bridles; fastening.—A piece of rope *D*, with a snap-hook *B*, *C* at each end, is used for connecting horses together, especially for military purposes. The hooks engage with the rings *A* of the bridles.



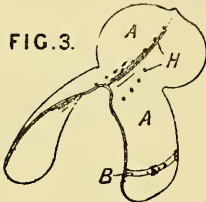
11,064. Bark, H. June 18.

Nosebags.—A crescent-shaped piece of canvas &c. *A* is attached to the nosebag at 12, and is strapped round the horse's nose by a strap 14. The piece *A* prevents the escape of the grain if the horse tosses up the bag.

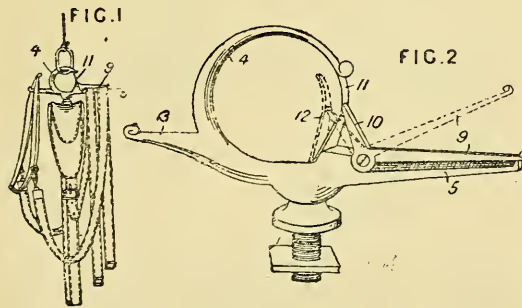


11,237. Harrison, E. June 21.

Saddles; lining.—A riding or a harness saddle is lined with a sheet *A* of zinc, aluminium, or the like, shaped like the saddle and attached thereto either by straps *B* or permanently. Holes are made at *H* for ventilation. The metal comes in contact with the horse's skin, and diminishes friction, while allowing ventilation. The lining may be corrugated, and may be in several pieces.

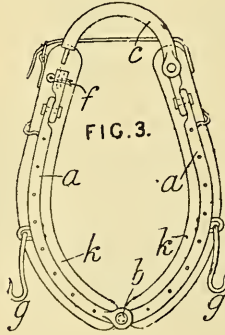


11,115. Henrici, G. J. H. June 19.



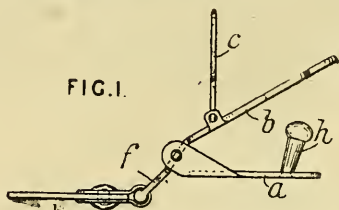
11,832. Harwood, J. June 29.

Collars, neck; fastening.—The hames consist of bars *a*, pivoted at *b* and provided with a pivoted section *c* at the top, which may be fixed by a cottar *f*. The hames are riveted &c. to the collar body *k*, which is made open at the top. The hames carry suitable hooks *g*.



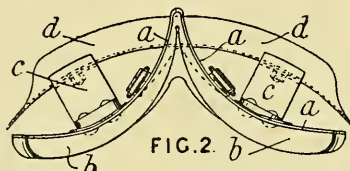
Fastening; brackets for.—Relates to a check hook which may be used as a bracket or clip suspender

11,978. Groeschel, E. W. July 3.



Fastening.—Relates to clasps for supporting horse blankets &c. Fig. 1 shows a view of the clasp open. The hinged parts *a*, *b*, *c* are connected together as shown, the tail end *f* of the part *b*, which is bent down as shown, being connected to a strap. The part *a* is pivoted on the part *b*, and carries an inclined stud *h* over which the fabric of the garment &c. is placed. The part *b* is then pressed down so that the stud and fabric are forced through an opening in the part *b*. The part *c* is formed with a notch at the end which engages the stud when closed down, and gives further security.

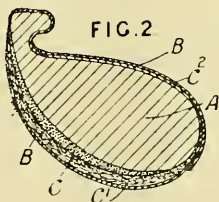
12,198. Lees, W. July 6.



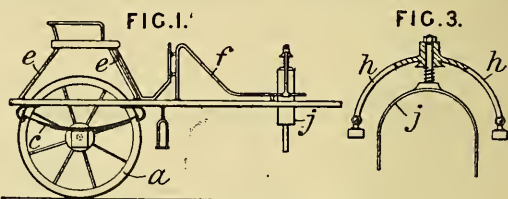
Saddles.—Cart and like saddles consist of a leather part *a* and a backband or chain trough *d*, supported well above the part *a* by brackets *c* with broad bases. Pressure on the spine is thus prevented. The leather may be lined with felt *b*.

12,210. Sewell, H. J., and Sims, J. July 6.

Collars, neck.—The body *A* is made of vegetable pulp pressed to shape. The body is covered with leather *B*, beneath which is felt *c*² on the outer side and straw *c* and wool *c*¹ on the inner or neck side.



12,228. Martin, H., and Cribb, F. July 6.



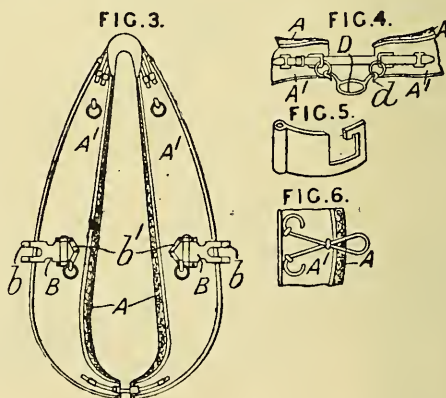
Saddles.—The shafts of the one-wheeled vehicle shown have frames *f* to which is secured the yoke *h* passing over the horse's back. This yoke has a spring saddle pad *j*, which is fastened to the horse.

12,294. Harrison, E. G. M. July 7.

Saddles.—The frame *D* of the pommel of a lady's riding saddle is made to slide, without turning, upon the upright *B* by which it is secured to the tree. A spring *F* normally keeps the pommel in its lowest position, but during leaping the frame slides upwards and produces the effect of a longer pommel.



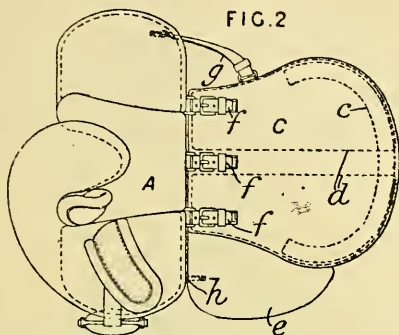
12,417. Chapman, B. F., and Chapman, W. J. July 10.



Collars, neck.—The padded leather part *A* is covered in front with steel plates *A'* attached by stitching, and then turning over the edges of the plates to form a beading. The draught attachment may consist of a forked plate *B*, pivoted or fixed

to a base-plate b^1 . Eyes are formed at b . Figs. 5 and 6 show other forms of draught attachments, and Fig. 4 a pole attachment for double harness. The ring D has hooks d for rings at the base of the collar. The Provisional Specification states that the leather &c. may be attached to the plates A^1 by springing over the edges of the plates U or C-shaped beadings.

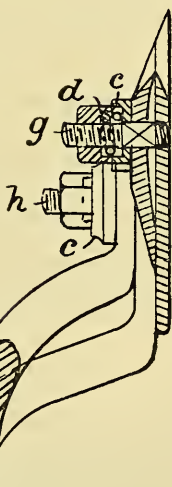
12,595. **Nicholls, L. L.** July 12.



Saddles.—The rear or seat part C of a lady's saddle is made detachable from the front part A, which alone is formed with a tree. The seat consists of a leather part C, strengthened by a metal plate c and provided with inflated or other pads d . This seat is connected to the part A by buckle straps f , g , and a strap h connects the flap e with the girth.

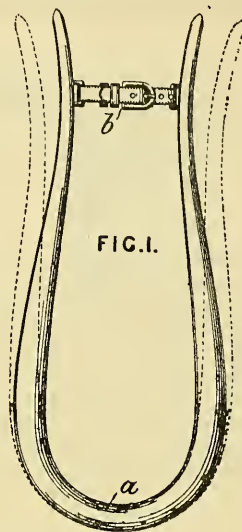
13,353. **Clark, W. T.** July 24.

Horse clippers and the like.—The nuts d and washers c , which hold the movable blade and handle of a hair clipper on the guide-pins g and pivot pin h , are made hollow to contain springs, which prevent the nuts from unscrewing.

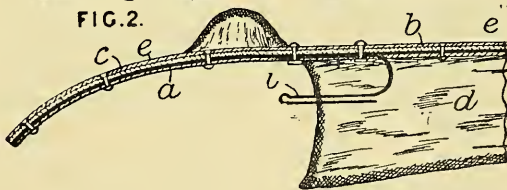
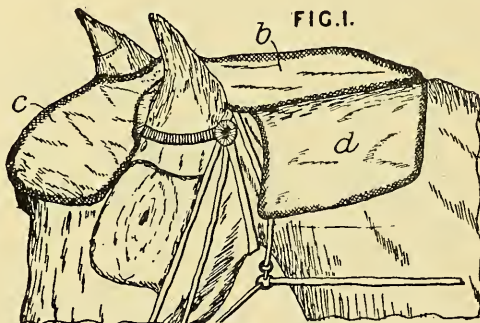


13,411. **Lake, H. H.,** [Anderson, J. R.]. July 25.

Collars, neck, hames for. The hames are made of a single piece of wood, the lower part c of which forms a spring bow. The upper ends are connected by a strap b .

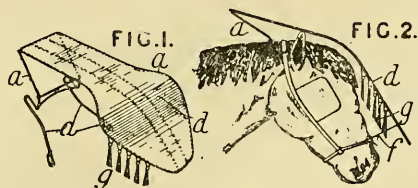


13,465. **Spong, J. F.** July 26.



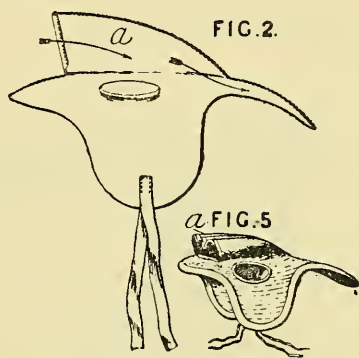
Sun screens.—The screen consists of one or more thicknesses of felt, canvas, &c., shaped at b , c , d to cover the head, neck, and base of the ears. This fabric is cemented &c. to a stiffening-lining e of pasteboard or canvas stiffened with shellac &c. The shape of the screen is maintained by a strip a of flexible but comparatively-inelastic metal, such as aluminium, which may be bent to the exact form desired. One or more hooks i attach the screen to the bridle. Transverse tapes may be used to keep the screen from contact with the animal's neck, and wet sponges may be fastened under the plate a .

13,612. Ward, C. H. July 30.



Sun screens.—The screen consists of a wire or cane frame *a* supporting a single or double sheet *d* of calico, canvas, or leather &c., and bent to rest on the horse's head and be attached to the bridle as shown. A fringe *g* keeps the flies off, and another fringe may be arranged at the back of the frame. A cord &c. *f* keeps the front of the screen in position. When a double sheet *d* is used, a layer of wool, asbestos, cork, &c. may be arranged between the two sheets.

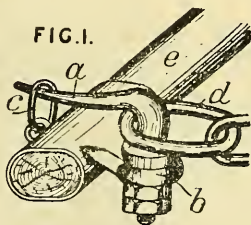
13,961. West, C. A., [trading as West & Co.]. Aug. 3.



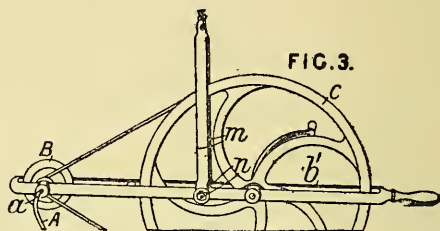
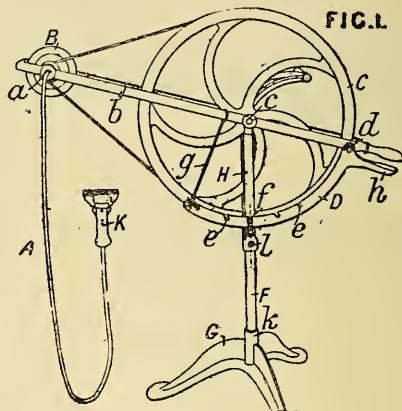
Sun screens.—The crown of the hat is surmounted by a fold *a* open in front for ventilating purposes. The rest of the hat sits fairly close to the head. The crown may be covered with perforated material. A small punkah or vane-wheel may be pivoted within the channel to distribute the air.

13,988. Wendler, F. Aug. 3.

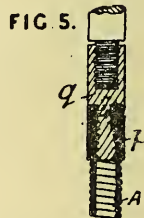
Fastening traces &c. Traces, draught-chains, &c. *d* are fastened to the whipple tree *e* or other part of vehicles, agricultural implements, &c. by a slip-hook *a* swivelled to a lug *b* and held in the locked position by a link *c*. The hook may be attached by a ring to the lug *b*, instead of swivelling.



14,006. Plant, W. H. Aug. 4.



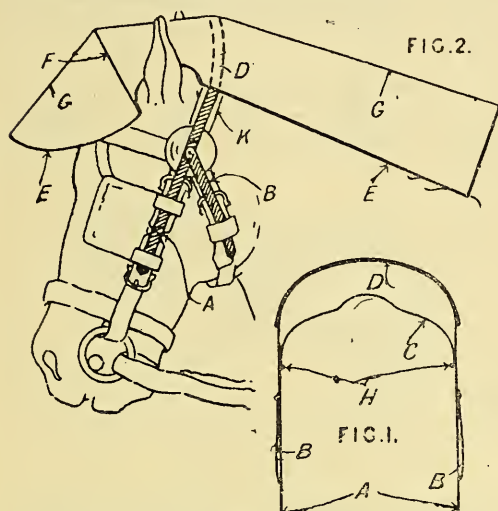
Horse clippers and the like.—The flexible shaft *A* of the clipper *K* is connected directly to the spindle *a* of the driven band wheel *B*. The end coils of the shaft *A*, Fig. 5, are soldered together and covered with a ferrule *p*, so that the connecting-piece *q* may be unscrewed without much difficulty. The shaft *A* and the spindle of the clipper are connected in the same way. The band wheels *B*, *C* are mounted between parallel bars *b*, *b'*. In the pillar form of machine, the frame *b* is pivoted at *c* to the fork *H*, connected by a set-screw *l* to the stem *F*, which is made in one piece and fits loosely in the socket *k* of the base *G*. The position of the frame *b* in a vertical plane is adjusted by a curved bar *D* pivoted at *d* and provided with a handle *h*. The bar *D* has notches *e*, one of which is normally held against a locking-pin *f* by the spring *g*. In the hanging form of machine, the frame *b'* is pivoted at *n* to the forked hanger *m*.



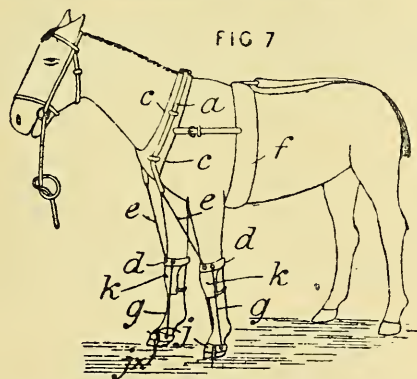
14,977. Smith, H. G. Aug. 22.

Sun screens.—The screen consists of a frame of wire *E*, *F*, *G* covered with holland &c. and attached to the head by metal strips *A*, *B*, *C*, *D*. The strip *C* rests on the crown band *K*, and the strip *D* supports the fabric. The strip *B* is hinged to the

strip A, and both pass through loops on the bridle. The strip A may be hinged at H for convenience in folding the screen up.



15,609. Frankenstein, E. R. Sept. 3.

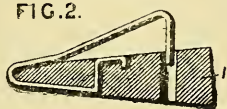


Horse-training harness.—The object is to improve the gait of horses &c. Straps, cords, &c. or elastic bands *e* are attached to the bands *d* of the knee caps *k*, and pass through a rubber &c. tube *a* strapped to the hames or to a collar *c* without hames. The collar is attached by straps to the saddle or the girth or surcingle *f*. Cords &c. *g* connect the bands *d* to the straps or boots *j* provided with clips *j*^x for engaging the hoof. The hind legs may be fitted with similar harness.

15,652. Childress, H. P. Sept. 3.

Fastening traces. The eye in the trace end is passed over the end of the whipple-tree 1, and held in place by the spring catch shown.

FIG. 2.



15,836. Donisthorpe, A. R. Sept. 6.

Saddles, pads for. A knitted pad or numnah for use beneath riding saddles consists of a rectangular part A, which may be divided up the centre *c* or may consist of several rectangular pads knitted together. The central pad may be extended to form wings *d'* so that the whole pad is of saddle shape. The part A may consist of a knitted bag enclosing another knitted bag *b* or a crêped inner sheet H, or may be formed with long loops I. The material used is preferably woollen yarn, but cotton or flax &c. may be used. The Provisional Specification states that the outer bag A may enclose an inflated rubber bag or tubes.

FIG. 1.

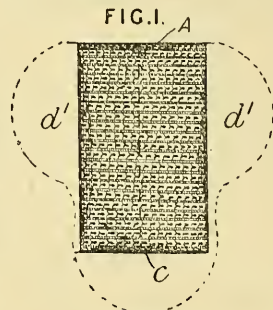


FIG. 6.

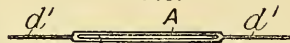
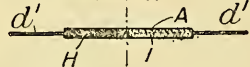


FIG. 7.



15,876. Stewart, J. K. Sept. 6.

Horse clippers.—Relates to flexible shafts for imparting motion to portable machines, such as clippers. Rigid sections G, G' are geared together by rose-wheels K, and are supported in bearings H, H' hinged together, the axis of the hinge being tangential to the pitch lines of both wheels. Tubular casings L extend between the two bearings of each section, and are secured thereto at one end. The gearing connecting the last section with the tool is protected by a hood formed on the latter.

FIG. 1.

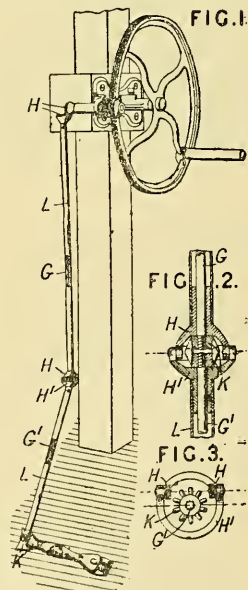


FIG. 2.

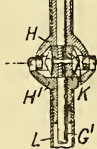


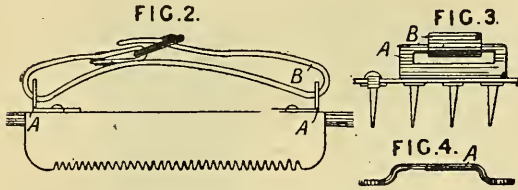
FIG. 3.



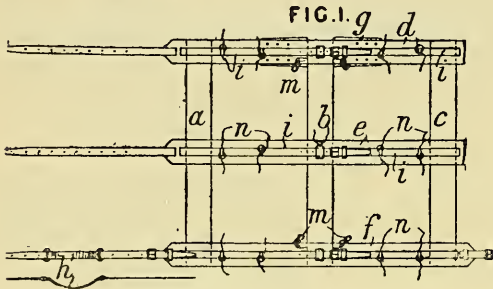
16,510. Veal, S. P. Sept. 17.

Currycombs.—The handle of the currycomb consists of a buckled strap B passing through loops A riveted to the currycomb. The loops may be

made from sheet metal or wire, as shown in Figs. 2 and 3 and Fig. 4 respectively.



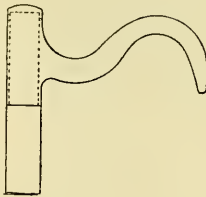
16,662. König, F. Sept. 18.



Saddles, pack. Relates to an arrangement of straps to form a substitute for a pack saddle for horses, oxen, &c. Three girths *d, e, f* are held apart by straps *a, b, c*. The girth *d* has wither pads *g*, and the girth *f* has a rigid curved piece *h* to prevent pressure on the penis or lacteal vessels of the animal. The girths may have hooks *m* and straps *i* with corls *n* for attaching the load of fodder &c., or the load may be placed in sacks or pockets fixed to the girths.

18,144. Irven, C. N. Oct. 12.

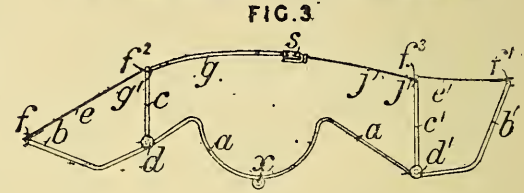
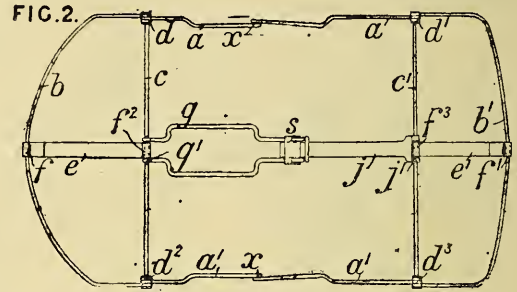
Whips and hunting-crops.—The handle of a hunting-crop or whip is of S-form as shown, so that it may be readily used for pushing or pulling gates &c.



18,174. Mitchell, J. Oct. 12. Drawings to Specification.

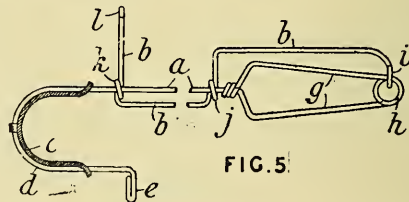
Spur-carriers.—Relates to a special form of legging. The Provisional Specification states that in association with the legging is used a spat piece which serves to cover the boot instep and to carry a spur-holder and an under boot strap, the three being readily separable from each other.

18,288. Smith, G. F. Oct. 13.



Sun screens; ventilation.—The frame is made of wire or the like hinged so that it may fold up. It is covered with fabric &c. with holes for the ears, and is fixed to the head by straps attached to the loops *x*. A revolving fan may be fixed in the crown of the screen or bonnet. Figs. 2 and 3 show an underside plan and an elevation respectively of the folding frame. It consists of wires *a, a'* and arched wires *b, c, b', c'* hinged to the wires *a, a'* at *d, d', d'', d'''*. The wires *b, c, b', c'* are stretched apart by metal strips *e, e'* hinged at *f², f³* and forked at *f, f'*, and the wires *c, c'* are stretched apart by a wire frame *g* hinged at *g'* and a metal strip *j* hinged at *j'*. The parts *g, j* are held in an abutting position by a sleeve *s*. The part *j* may be of wire, and the parts *e, e'* may each consist of two wires hinged together and held in line by a sliding sleeve.

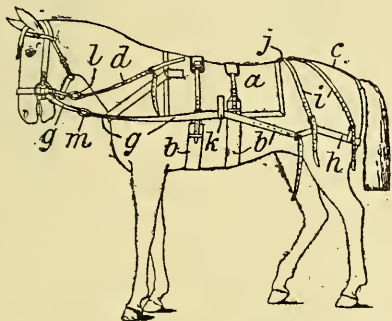
18,473. Whiting, A. E. Oct. 16.



Tethering animals.—Relates to an appliance for holding the leg of a cow during milking. The appliance consists of a rod *a* with handle *g* at one end and a hook *d* with bent end *e* at the other. A rod *b* with turned-down portion *l* is connected to the rod *a* by the loops *i, j*, and *k*, which are out of alignment with each other and, in consequence of the elasticity of the rods *a* and *b*, tend to keep the portion *l* of the rod *b* locked with the part *e* of the rod *a*, thus closing the hook *d*. The rod *b* is

forced into the position shown in Fig. 5 by pressure with the thumb near the handle *g*. The appliance may be secured by a rope in the loop *h* to any convenient part of the stall. A pad *c* is placed on the hook *d* to prevent injury to the cow's leg.

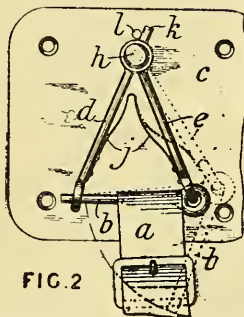
18,780. Coleman, J. Oct. 20.



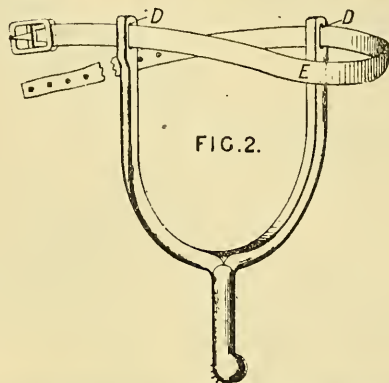
Horse-breaking harness.—Relates to harness for breaking-in horses. A felt &c. back cloth *a* is attached by girths *b*, *b'* and connected to the bit by reins *d* and to the crupper *c* by a loop *j*. A breast strap may be connected to the back cloth. Reins *g*, passing through loops *k*, connect the bit to the breeching *h* supported by loin straps *i*. Elasticity is given to the reins by rubber sections *l*, *m*, and the loop *j* may be of rubber.

19,144. Jones, C. D. M., [Jones, R. G.]. Oct. 25.

Stirrup straps, suspending.—The stirrup strap *a* is hung on a pin or bar *b* connected by an eye to the lever *e* and passing freely through an eye on the lever *d*. These two levers are pivoted together on a pin *h*, which connects them to the plate *c* fixed to the saddle-tree. The levers may be hung on a pin separate from the pin *h*. The lever *d* has a projection *k* which abuts against a pin *l*. A spring *j* holds the parts in the closed position shown. Should the rider be thrown with his foot in the stirrup, the lever *e* is pulled away from the lever *d* so as to disengage the bar *b*, as shown in dotted lines, and free the stirrup leather. The levers *d*, *e* may be in one piece, the part connecting then acting as the spring *j*.



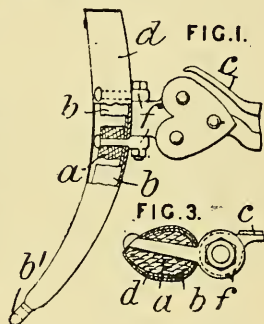
19,189. Agassiz, R. L. Oct. 26.



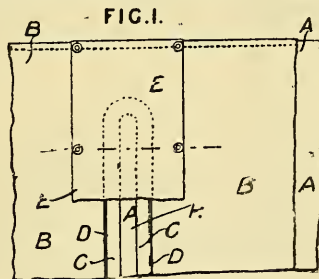
Spurs.—Each arm of the spur has a vertical slot *D* in its end for the fastening-strap *E*, which passes round the boot. The strap is curved when laid flat, a better fit being thus obtained.

19,205. Smart, A. Oct. 26.

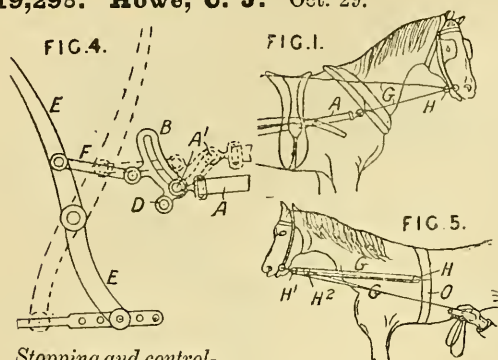
Collars, neck, hames for. A strengthening metal sheath *b*, preferably of iron or steel, is placed between the wooden part *a* of a hame and the brass &c. covering *d*. This sheath is formed with an eye at *b'*, and extends to a point above the eyes *f* carrying the draught hook *c*.



19,246. Mackay, R. M., [trading as City Repair Co.]. Oct. 27.



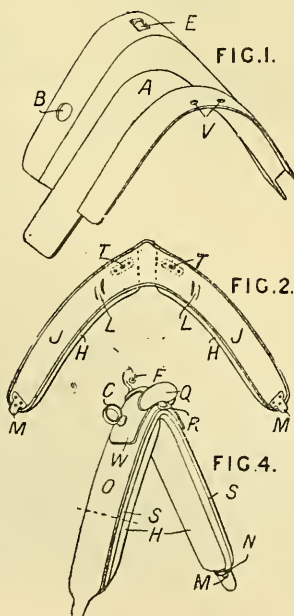
Clothing for animals; ventilation.—A loin cloth consists of a woollen cloth *A* covered with a waterproof sheet *B*, in which is a central ventilating-aperture *H* loosely covered by a strip *E* riveted in place. Strips *C*, beaded at *D*, prevent water from running through the aperture *H*.

19,298. **Howe, C. J.** Oct. 29.

Stopping and controlling runaway and restive horses; horse-breaking harness.—The object is to control runaway or restive horses and to break-in horses. To increase the power of the reins, each rein G, Fig. 1, is attached at one end to a trace A or the shaft &c., and passes over a pulley H on the bit. Fig. 2 shows a pulley H, guarded by arms M, fixed to the bit ring J by a cross-bar K. The trace A, Fig. 4, is attached to a pin &c. A' sliding in a link B pivoted to the vehicle at D and connected by a pivoted bar F to the brake-actuating lever E. When the driver has pushed over the brake lever so that it occupies the position shown in dotted lines, a pull on the traces forces the brake still more firmly against the wheel. For breaking-in horses &c., the rein G, Fig. 5, runs over pulleys H¹, H² fixed to the bit and over a pulley H fixed to the surcingle O.

19,413. **Thompson, A. G.** Oct. 30.

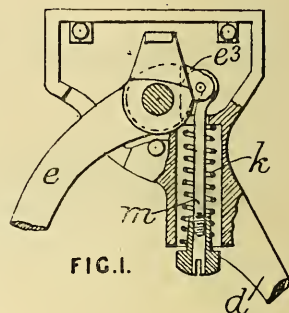
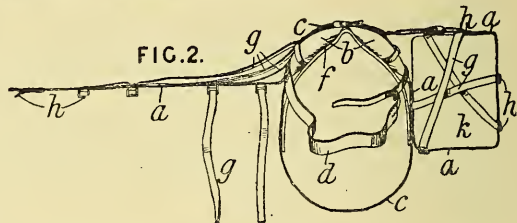
Saddles, harness. The removable pad H is attached to the metallic tree A made in one piece, by tongues which take into loops L on the upper lining J of the pad and by the terrets C which pass through the holes B and screw into fixed sockets T. Holes are made at E, V for the bearing-rein hook F and for the seat Q and crupper loop R respectively. The flaps O are beaded at S to overlap the edge of the lining J, and have loops N for metal



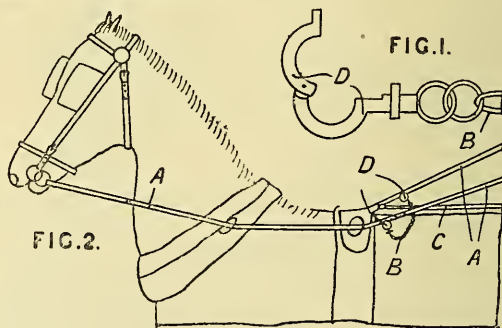
tongues M on the pid. The leather cap piece W surmounts the flaps O.

19,427. **Martin, A.** Oct. 30.

Horse clippers and the like.—The improvements in hair or animal clippers are shown applied to such an apparatus as is described in Specification No. 10,107, A.D. 1900. One handle e is formed with a crank e³, and the other handle d contains a spring k which acts upon a rod m hooked upon the crank.

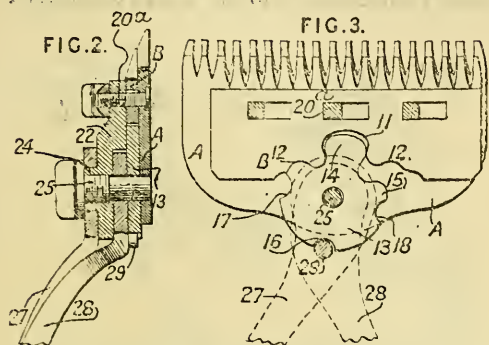
19,813. **Imray, O.,** [Greville, B.]. Nov. 5.

Saddles, pack. The saddle consists of a sheet of canvas &c. a carrying pads b and a saddle cloth f and provided with straps g, buckles or loops h, a girth e, a breast strap d, and a breeching strap (not shown). The sheet a is folded over the pack k and fastened by the straps g. The saddle can be readily removed from the animal's back, without unpacking the articles themselves, by unfastening the girth and breast and breeching straps.

19,870. **Hall, J.** Nov. 5.

Bridles, reins for. The driving-reins A are made to serve as a bearing-rein by connecting a chain B thereto. This chain is fixed in the middle to the crupper strap C, and carries at each end a divided ring D for passing through holes in the reins.

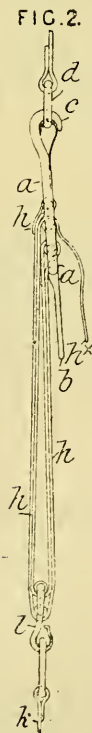
19,972. Quarrie, A., and Leitch, A. J.
Nov. 6.



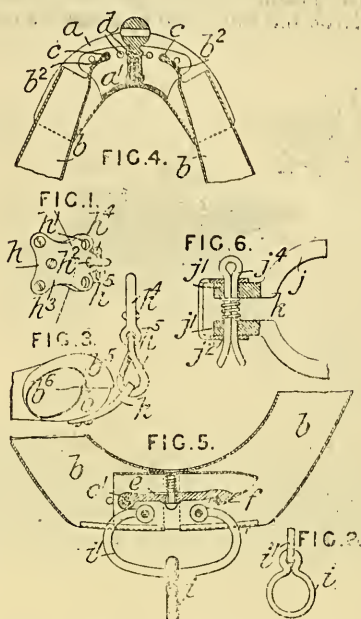
Horse clippers and the like.—The handles 27, 28 are so attached that they may be arranged at about right-angles to the line of teeth, as shown, or inclined to the right or left. One handle 27 may be fixed in different positions on the polygonal boss 24 of the bridge-piece 22. A screw 25 keeps this handle on the boss, and serves with the screw 20^a to fix the bridge-piece to the fixed cutter A. The movable cutter B has recesses 11, 12 for the projections 14, 15 on a disc 13 loose on the pin 25. The handle 28 is connected to this disc by a pin 29, which is placed in the recess 16, or, when the handles are inclined, in the recess 17 or 18.

20,785. McFarlane, W. T.
Nov. 17.

Fastening. — Relates to a fastener specially applicable for securing saddles, packs, &c. on horses or other animals. The lever *a* has a hook *c* which engages a ring *d* on the saddle. The frame *l* is secured by a hook to the girth or bellyband *k*. The strap *h* passes over bars on the lever *a* and frame *l* in the manner shown, and is tightened by pulling up the free end *h*^x. To release the fastener, the handle *b* of the lever *a* is raised, whereupon the strap is no longer gripped.



20,843. Taunton, R. H., and Holloway, G.
Nov. 19.

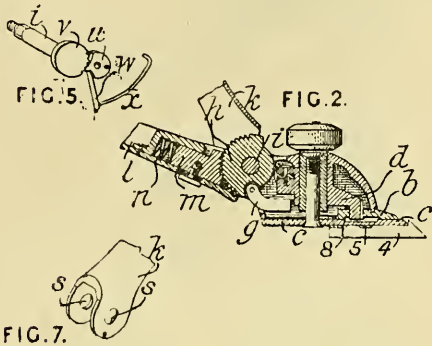


Collars, neck.—The sides *b* of the collar are of sheet steel or other metal, the edges *b*¹, *b*², Fig. 3, of which overlap, without being joined, so as to give elasticity to the collar. The sides are united at the top by a bracket piece *a*¹, fixed by a screw &c. within the curved piece *a* of U-section. The sides *b* have extensions *b*² fixed by pins *c* taking into a series of holes *d* in the piece *a*¹. The sides are united at the bottom by a spring catch *e* adjustably pivoted at *e*¹ and hooked to a pin *f*. The pole-chain ring *i* is made as shown in Fig. 2, so that it may not rattle on the link *i*¹. The rein rings *j* are prevented from rattling by the spring *k* on the hinge pin *j*¹. The spring presses the lugs *j*¹ of the ring against the bracket piece *j*² riveted to the collar. The traces are fastened to the hook *h*⁴ connected to a hook *h*⁵ which hooks into one of the holes *h*¹, *h*², *h*³ in the plate *h* riveted to the collar as shown.

20,884. Coates, G. H. Nov. 19.

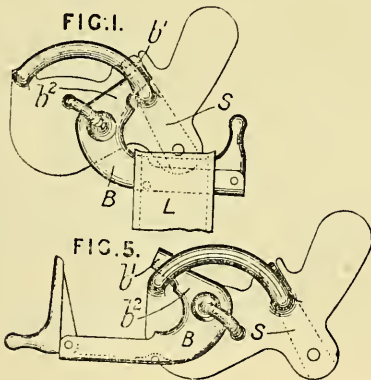
Horse clippers and the like.—The handles *k*, *l* lie in a plane at right-angles to the plane of the cutters, and are independently adjustable in the former plane. The handle *k*, which is fixed in use, has lugs with holes *s* for the bolt *i* on which the handle fits without turning. The bolt *i* turns in the head of the clipper, and is fixed in any position by a pawl *u* engaging the notched head *v* of the bolt. The pawl is kept in position by a spring *x* and rod *w*, and is connected to a thumb-latch. The handle *l*, which is movable in use, carries a

spring pawl *m* engaging with the toothed disc *h*. The position of this handle is altered by altering the relative position of the pawl and disc. The disc *h* rocks on the bolt *i*, and operates the cutter *b*



by means of the link *g* and the three-armed lever *d*. A spring acting on one of the arms brings the parts back again to their original position. The comb consists of a number of bars 4 with projections 8 riveted to a plate 5 attached to the lower cutter *c* by clips.

20,935. Bednall, J. T. Nov. 20.

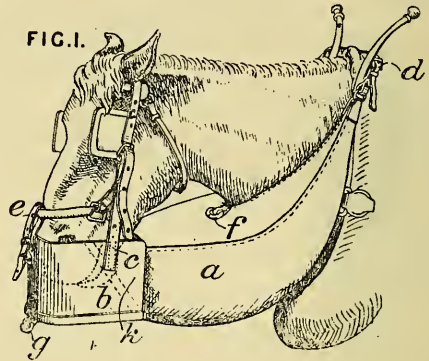


Stirrup straps, suspending.—To prevent the bar *B* from rattling or liberating the stirrup leather *L* when not required to do so, a spring *S* is made to bear on the end *b*² formed with the lug *b*¹. Figs. 1 and 5 show the bar in the closed and open position respectively.

21,128. Daws, G. Nov. 22.

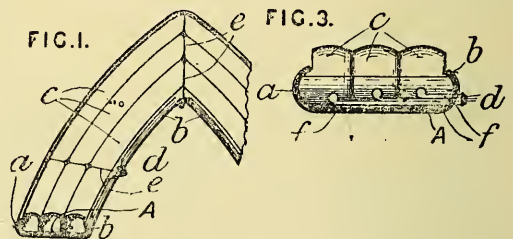
Nosebags and food - containers.—A feeding-appliance consists of a trough *b* of tin, leather, &c. attached to a bifurcated bag *a*, which embraces the animal's neck and is held in place by a strap *d*.

Another strap *c* attached to the trough *b* passes over the animal's head. As the food is consumed, it passes from the bag *a* to the trough *b* beneath a



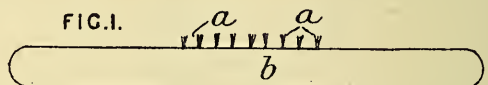
flap at *h*. The bag is closed by connecting the strap *e* to the ring *f*, and it may be suspended by the ring *g* when not in use.

22,002. Schibalski, G., Schibalski, E., and Kutschka, T. Dec. 4.



Collars, neck; padding.—The padding of pneumatic horse-collars consists of a number of inflated tubes arranged parallel to one another and divided by diaphragms *e* into compartments *c*. Each compartment has its separate tube *f* and inflating-valve *d*. The compartments may be separate tubes with closed ends abutting against one another. The tubes are fitted in a frame *A* with flanges *a*, *b*.

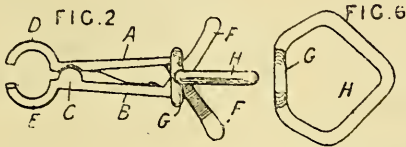
22,133. Esmarch, C. F. von. Dec. 5.



Bits.—A horse is induced to keep its tongue beneath the bit by fixing bristles *a* of "magnolia" metal &c. upon the upper side of the mouth-bar *b*

of a stiff or hinged bit. These bristles irritate the lower side of the tongue, but do not affect the palate.

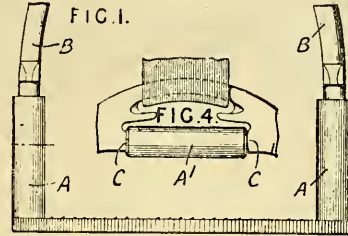
22,580. Lean, W. W. Dec. 11.



Fastening.—The levers A and B are pivoted together at C, and their ends D, E form jaws, which may be of any suitable shape. Their points may be flat, or may be cut away so as to interlock. The other ends of the levers A, B cross one another, and are surrounded by the ring G attached to the link H, the extreme ends F being so formed that the ring G cannot pass over them. Tension applied to the link H causes the ends of the levers to move together so that the jaws are

closed. A spring I may be employed to keep the jaws closed when the fastener is at rest. The fastener may be used as a swivel, if the link H is of suitable shape. Fig. 6 shows one of a number of forms of link illustrated.

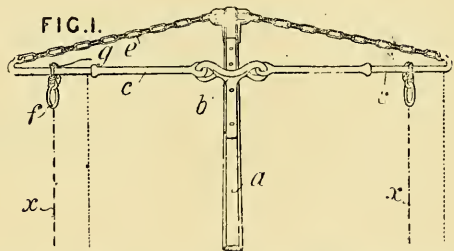
22,814. Hall, H. Dec. 14.



Stirrups.—To prevent a fallen rider from being dragged with his foot in the stirrup, antifriction rollers A, A' are placed on the legs B or on a bar C beneath the stirrup leather, or in both places.

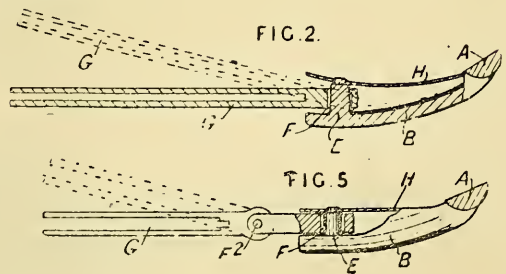
22,983. Brigg, T. H., and Walker, C. W. Dec. 15.

Fastening pole-chains and straps. Relates to pole-end fittings for carriages, omnibuses, vans, and other vehicles drawn by two or more animals abreast, and consists of improvements on the means described in Specification No. 18,666, A.D. 1899, for making the animals exert their backing power in planes parallel to the pole. In the plan shown in Fig. 1, two arms c are pivoted to the plate b fixed to the pole a, and are held perpendicular to the pole by chains e when the animals are backing. To allow the animals to move laterally from their normal position x, the arms c are extended, and the collar-rings f of the animals are detachably connected by slip-hooks g or the like which can slide on the arms. In modifications, the collar rings may slide on the arms c, and the chains e are then detachably connected, and the chains may be connected to the arms at additional points.



23,083. Wincer, C., [trading as Wincer & Co., C.]. Dec. 18.

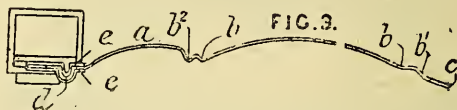
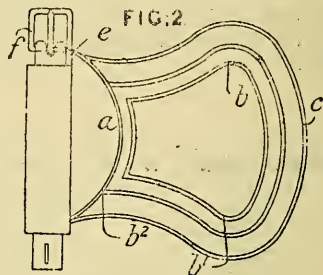
Collars, neck, hames for. The eye F on the trace clip G or an eye on the trace itself takes over a stud E, Fig. 2, on the hame draught B welded to the hame A. The draught B is of channelled section, and the recess is covered by a plate H riveted over the stud E. The clip or trace is free to move horizontally, as shown in dotted lines, or vertically. Fig. 5 shows a modification, in which there is an additional joint F' at right-angles to the joint E, F. The clip G may be replaced by the trace itself, as in the form first mentioned.



23,221. Thompson, W. P., [*Diedrich, E.*].

Dec. 19.

Bridles, blinkers for. The blinker is made of celluloid or like translucent material, and the horse is prevented from seeing backwards by giving the celluloid an opaque coating or by colouring it dark or by forming a boss at *a*. Ribs may be formed at *b*, *b'*, *b''* to stiffen and ornament the blinker; the edge *c* also may be thickened. The blinker may be attached by forming a bead at *d* and sliding it vertically in a suitable groove in the cheek strap *e*. The buckle *f* may be used to prevent the blinker from coming out accidentally.



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1903.

PATENTS FOR INVENTIONS.

ABRIDGMENTS OF SPECIFICATIONS.

CLASS 62,
HARNESS AND SADDLERY.

PERIOD—A.D. 1901-4.



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1906.

EXPLANATORY NOTE.

The contents of this Abridgment Class may be seen from its Subject-matter Index. For further information as to the classification of the subject-matter of inventions, reference should be made to the *Abridgment-Class and Index Key* (price 1s., by post 1s. 6d.), and the *Appendix to Key* (price 1s., by post 1s. 4d.), published at the Patent Office, 25, Southampton Buildings, Chancery Lane, W.C.

It should be borne in mind that the abridgments are merely intended to serve as guides to the Specifications, which must themselves be consulted for the details of any particular invention. Printed Specifications, price 8d., may be purchased at the Patent Office, or ordered by post, no additional charge being made for postage.

SUBJECT-MATTER INDEX.

Abridgments are printed in the chronological order of the Specifications to which they refer, and this index quotes only the year and number of each Specification.

Animal clippers. *See* Horse clippers &c.

Animals, Stocks and like appliances for holding. '01. 5486. '02. 4087. 5388. 17,925. 21,816. '03. 23,758. '04. 16,430.

Backbands. *See* Harness &c.

Bags or nosebags. *See* Harness &c.

Bags, Saddle. *See* Harness &c.

Bearing-reins. *See* Harness &c.

Bellybands. *See* Harness &c.

Bits for animals. *See* Harness &c.

Blankets, Horse. *See* Harness &c.

Blindfolding-appliances for animals. *See* Harness &c.

Blinkers, Bridle. *See* Harness &c.

Boots, Horse. *See* Harness &c.

Brackets, stands, and suspending-arrangements for harness and saddlery. *See* Harness &c.

Breaking-in horses and other animals. *See* Training and breaking-in horses &c.

Breeching. *See* Harness &c.

Bridles. *See* Harness &c.

Cart-saddles. *See* Harness &c.

Catching poultry or other animals, Appliances for. *See* Lassos &c.

Chains for harness. *See* Harness &c.

Clippers, Horse and like. *See* Horse clippers &c.

Clothing for animals. *See* Harness &c.

Collars, Horse. *See* Harness &c.

Combs for animals. *See* Harness &c.

Cows, Tethering. *See* Tethering animals.

Currycombs. *See* Harness &c.

Dog collars, couples, leashes, leaders, and the like. '78. 4069, [*Appendix, page* 100]. '01. 15,604. '02. 11,063. 15,558. 21,766. '03. 1347. '04. 423. 6497.

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name plates or labels for. *See* *Abridgment Class* Labels &c.

Dog slips. *See* Dog collars &c.

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Dung or droppings catchers. *See* Harness &c.

Fallen horses, Harness for releasing and raising. *See* Harness &c.

Forage or nose bags and the like. *See* Harness &c.

Girths, Saddle. *See* Harness &c.

Grooming animals, Appliances for. *See* Harness &c.

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Hair clippers. *See* Horse clippers &c.

Halters for animals. *See* Harness &c.

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Harness and saddlery, [*including* Clothing for animals]:

awls for sewing. *See* *Abridgment Class* Sewing &c.

Harness and saddlery—cont.

back and nelly bands. '01. 12,352. '02. 18,280. '03. 8484. '04. 3698. 27,148.

fastening. *See* fastening below.

bearing-reins. *See* bridles &c. below.

bellybands. *See* back and belly bands above.

bits. '80. 3394, [*Appendix, page* 101]. '01. 6182. 7351. 17,889. 18,407. 21,194. '02. 2953. 8777.

15,382. 23,469. '03. 5489. 7496. 8613. 15,328.

21,489. 22,915. '04. 1885. 5507. 13,165. 18,482.

19,596. 19,597. 19,598. 24,534. 26,655.

blankets. *See* clothing for animals below.

blindfolding-appliances. *See* bridles &c. below.

blinkers. *See* bridles &c. below.

boots. *See* horse-boots below.

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breast collars. *See* collars, breast below.

breaching. '01. 12,399. 26,762. '02. 6917. 18,748. '03. 22,136. '04. 17,026.

fastening. *See* fastening below.

bridles and halters. '01. 1135. 5090. 6182. 10,335. 11,119. 16,441. 17,889. 18,407. 21,351.

26,762. '02. 2953. 14,235. 17,294. '03. 2315.

2761. 3728. 10,588. 15,328. 16,522. 18,351.

22,136. 22,169. 25,504. 27,570. '04. 5222. 5507.

6310. 7495. 9767. 11,812. 12,276. 14,051.

15,348. 18,970. 21,265. 26,655.

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fastening. *See* fastening below.

bridoons. *See* bits above.

brushes. *See* *Abridgment Class* Brushing &c.

buckles. *See* *Abridgment Class* Fastenings, Dress.

casting tackle. *See* throwing animals, harness for below.

cavassons. *See* horse breaking &c. below.

choking-apparatus for checking horses. *See* bridles &c. above.

cleaning and polishing, apparatus for. '01. 25,835. '04. 677.

clippers. *See* Horse clippers &c.

clothing for animals. '01. 25,675. '02. 2248. 5093. 22,909. 26,539. 27,668. 27,806. '03.

5114. 5960. 10,105. 25,564. 27,672. '04. 3698.

5572. 11,864.

fabrics for. *See* *Abridgment Classes* Water-proof and similar fabrics; Weaving and woven fabrics.

fastening. *See* fastening below.

collars, breast. '01. 7101. '04. 27,176.

fastening. *See* fastening below.

collars, head. *See* bridles &c. above.

collars, neck. '01. 382. 2008. 2392. 7251. 11,198. 13,521. 17,830. 17,881. 18,051. 18,090. 21,119.

23,670. 24,872. '02. 1625. 7794. 18,604. 18,605.

19,077. 19,637. 26,910. 28,148. '03. 1083.

1913. 4779. 6431. 10,472. 12,211. 13,504.

13,798. 13,905. 15,533. 15,596. 17,816. 28,369.

'04. 5453. 7759. 9492. 17,850. 23,788. 24,652.

25,803. 27,176. 27,726.

fastening. *See* fastening below.

combs, [other than currycombs]. '04. 12,118.

covers, saddle. *See* saddles below.

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'04. 17,814.
crutches, saddle. *See saddles below*.
currycombs. '04. 26,337.
cutting-machines for. *See Abridgment Class*
Cutting &c.
displaying for sale or inspection. *See Abridgment*
Class Advertising &c.
draught-chains. *See traces below*.
dressing - compositions. *See Abridgment Class*
Leather.
droppings, devices for catching. '02. 26,710.
dumb-jockeys. *See horse breaking &c. below*.
elbow pads. '03. 6431.
electric and magnetic. '02. 2248. '04. 5572.
17,814.
embossing and printing. *See Abridgment Class*
Printing other than letterpress &c.
fabrics for. *See Abridgment Classes Waterproof*
and similar fabrics; Weaving and woven
fabrics.
fallen horses, fastenings for releasing. *See*
fastening below.
fallen horses, raising. '02. 13,544.
fastening—
back and belly bands. '78. 3600, [*Appendix,*
page 100]. '01. 10,218. 12,352. '02. 9609.
27,094. '03. 3955. 8484. 22,136. 26,921. '04.
25,714.
bits. '01. 6182. 10,031. '02. 8777. 14,235. '03.
1675. 8613. 18,351. '04. 7884.
breaching. '01. 10,218. 12,399. '02. 1683. '03.
22,136. '04. 10,807. 17,026. 23,459.
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21,351. '02. 913. 4991. 14,235. '03. 1675.
4373. 10,588. 15,331. 16,522. 18,050. 18,351.
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'01. 6182. 11,225. 12,352. 21,351. 24,872. '02.
19,042. '03. 6431. '04. 7707. 7949. 9492.
12,276. 16,014. 16,806. 25,714. 27,850.
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'82. 2589, [*Appendix, page 102*].
clasps for. '04. 23,459.
clips for. '01. 17,943. '02. 15,866. 20,370.
25,144.
clothing for animals. '02. 27,806. '03. 10,105.
25,564. '04. 3698.
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collars, neck. '01. 2008. 4998. 10,218. 17,881.
18,090. 21,023. 24,872. 23,670. 23,671. '02.
9609. 15,018. 19,077. '03. 1675. 2061. 2426.
4779. 13,798. '04. 13,010.
couplings for. '01. 2008. 4998. 10,218. 20,171.
23,670. '02. 9609. 25,144. '03. 1675. 20,457.
'04. 8241. 9972. 21,218.
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draw-bolts for. '01. 5517. 10,218. '02. 13,544.
eyes for. '01. 5517. 12,399. '02. 5945. 19,042.
'04. 25,074.
friction-gripping devices for. '02. 27,668. '03.
10,246. '04. 25,714.
hames. '01. 10,218. 17,881. 18,090. 21,023.
23,670. 23,671. 24,872. '02. 9609. '03. 1675.
2426. 4779. 13,905. '04. 13,010. 23,459.

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[*Appendix, page 100*]. '01. 1293. 3948.
6067. 6182. 6483. 6823. 7280. 8708. 9107.
10,031. 12,344. 12,352. 15,111. 17,881.
18,090. 21,023. 21,351. 23,671. '02. 379.
849. 850. 913. 4991. 8777. 14,235. 15,018.
16,828. 18,604. 18,605. 19,536. 26,910.
27,094. '03. 1675. 2061. 3955. 4373. 4779.
8613. 13,219. 14,775. 15,331. 18,050. 18,351.
18,565. 20,457. 25,941. 26,921. '04. 423.
1276. 3972. 6443. 7215. 7867. 7884. 8698.
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28,248. 28,739.
horse-boots. '02. 23,498. '03. 6431.
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16,828. '04. 9492.
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page 102].
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25,983. '04. 7707.
martingales. '03. 1675.
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Class Nails &c.
nosebags and food-containers. '03. 25,941.
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26,921. '04. 16,508.
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reins. '01. 6182. 8708. '02. 4991. '03. 1675.
10,588. 16,522. 18,050. '04. 1942. 15,348.
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saddle girths. '01. 6067. 11,225. 17,710. '02.
15,866. '03. 1675. 8484. 26,921. '04. 16,014.
16,806. 19,128. 24,884. 25,286. 27,850.
shackles and swivels for, [*including shackle*
fastenings]. '78. 4069, [*Appendix, page 100*].
'02. 16,828. 19,637. '03. 18,592.
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'02. 13,544. 19,467. '03. 1675. 20,967. '04.
8241. 9972. 16,806.
spring attachments for. '01. 5517. 7280.
11,225. 17,881. 25,319. '02. 19,766. '03.
6218. 8695. '04. 1942. 10,807. 16,472.
21,627.
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'02. 1683. 8750. 9609. '03. 2426. 4779.
8613. 8695. 23,639. '04. 7884. 13,010.
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staples for. '01. 17,943. 20,655. '03. 3955.
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7707. 25,286. 27,850.
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page 100]. 4069, [*Appendix, page 100*]. '01.
20,655. '02. 15,866. 20,370. '03. 13,219.
26,921. '04. 423. 9492. 23,459.
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- tugs, shaft. '01. 12,352. '02. 19,536. '03. 8484. 16,553. '04. 3972. 7949. 17,026.
- tug stops on shafts for. *See Abridgment Class Road vehicles.*
- yokes, neck. '02. 20,370.
- gags. *See Abridgment Class Medicine &c.*
- girths or rollers. *See clothing for animals above.*
- girths, saddle. *See saddles below.*
- grooming-pads. '83. 868, [*Appendix, page 103*].
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- hames. *See collars, neck above.*
- harnessing, systems of. '01. 7101. '02. 6917. '04. 27,148.
- head coverings, (*sun and weather screens*). *See sun and weather screens below.*
- headstalls. *See bridles &c. above.*
- heel-caps. *See horse-boots below.*
- hobbles. '02. 7270.
- hock-caps. *See elbow pads above.*
- hooks for suspending. *See brackets &c. above.*
- horse-boots. '01. 12,597. '02. 2248. 23,498. 28,659. '03. 6431.
- horse breaking and training. '01. 8708. 16,441. '02. 2953. 5265. 17,200. '03. 2315. 22,136. '04. 14,051. 19,548.
- horse cloths. *See clothing for animals above.*
- hunting-crops. *See whips &c. below.*
- inhalers. *See Abridgment Class Medicine &c.*
- indicating and recording the pull on the reins, means for. *See bridles &c. above.*
- interfering-rings and the like. '03. 6431.
- kicking-straps. *See breeching above.*
- knee-caps. '02. 2248. 6408.
- leather, artificial, for. *See Abridgment Class Leather &c.*
- leather-dressing compositions. *See Abridgment Class Leather.*
- leather, manufacture of. *See Abridgment Class Leather.*
- lining and padding. '01. 4679. '02. 26,539. '03. 2315. 4782. 6431. 15,533. '04. 7759. 24,652. 27,176. 27,726.
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- stuffing-materials. *See stuffing-materials below.*
- loin covers. *See clothing for animals above.*
- loops for straps. *See fastening above.*
- making wood parts. *See Abridgment Class Wood &c.*
- manes, devices for arranging. '02. 10,420.
- martingales. '02. 311. '03. 1675.
- fastening. *See fastening above.*
- materials, [*other than stuffing-materials*]. '02. 6408. 26,539. '03. 1347. 6431. 16,522. '04. 7759. 18,401. 27,176. 27,726.

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neck pokes, cradles, and the like. '02. 25,599.

nosebags and food-containers. '01. 4035. 5090.

5419. 8322. 11,119. 12,290. 19,148. '02. 17,188.

22,456. 23,397. '03. 13,504. 23,705. 25,240.

25,941. '04. 8751. 23,163. 28,298.

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pads for. '01. 2392. 13,521. 18,051. '02. 26,539.

27,359. '03. 1913. 4782. 6431. 15,596. 24,919.

25,366. '04. 23,788. 27,176.

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preventing horses from falling. '03. 15,328.

racks or stands for harness. *See brackets &c. above.*

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reins, bridle. *See bridles &c. above.*reins, cavesson. *See horse breaking &c. above.*reins, hand-protectors or muffs for. *See Muffs, [Abridgment Class Wearing-apparel].*reins or hitching-straps for halters. *See bridles &c. above.*

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'02. 13,544. 19,467. 24,207. '03. 1675. '04. 1576.

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saddles. '01. 1239. 3531. 4679. 7101. 8052.

11,198. 11,486. 13,521. 14,044. 17,268. 17,686.

18,304. 19,783. 21,382. 21,676. '02. 2953.

3055. 3712. 7270. 8649. 13,777. 15,098.

16,828. 17,200. 17,420. 20,137. 20,454. 21,800.

22,340. 25,842. 26,539. 26,733. 27,359. '03.

1913. 2832. 4782. 6218. 6431. 10,136. 10,246.

12,325. 14,382. 14,490. 14,790. 15,596. 18,870.

24,919. 25,366. 26,619. 26,991. '04. 729. 2825.

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singeing-apparatus. '01. 13,443.

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stirrups. '01. 19,259. 22,892. '02. 6943. 8778. 13,591. 16,557. 27,666. '03. 2478. 8504. 8994. 19,153. 23,241. 23,985. 27,927. '04. 1299. 2389. 6102. 8721. 22,555. 23,014. 25,860.

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brakes for vehicles, applying. *See Abridgment Class Road vehicles.*straps and bands, [*use not specified*]. '01. 20,655. '04. 27,176.fastening. *See fastening above.*

stuffing-materials. '03. 24,919.

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surcingles. *See clothing for animals above.*surgical and medical appliances. *See Abridgment Class Medicine &c.*tail ties, protectors, and the like, [*other than breeching-attachments*]. '02. 7600.

terrets and like guide-rings. '01. 11,198. 19,783. '03. 13,798.

tethering. *See bridles &c. above.*

throwing animals, harness for. '03. 2761.

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traces. '01. 15,622. '03. 8484. '04. 11,514. 21,627. 27,148.

fastening. *See fastening above.*tugs, hame. *See collars, neck above.*tugs or traces. *See traces above.*

tugs, shaft. '01. 9059. 12,352. 14,992. '03. 8484. 16,553. '04. 3972. 7949.

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20,454. 27,359. '03. 12,325. '04. 10,284. 11,864.

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yokes, neck. '02. 1853. 23,837. '03. 8695. '04. 7215. 16,508.

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Lasses and catching - appliances for dogs and other animals. '01. 20,777. '03. 22,890.

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Mouth bars or bits. *See* Harness &c.

Neck-yokes. *See* Harness &c.

Nosebags for animals. *See* Harness &c.

Numnahs. *See* Harness &c.

Pack-saddles. *See* Harness &c.

Pads for harness and saddlery. *See* Harness &c.

Pads or saddles. *See* Harness &c.

Pegs, Tethering. *See* Tethering animals.

Picketing or tethering animals. *See* Tethering animals.

Polishing harness and saddlery. *See* Harness &c.

Racks or stands for harness. *See* Harness &c.

Reins and rein-holders. *See* Harness &c.

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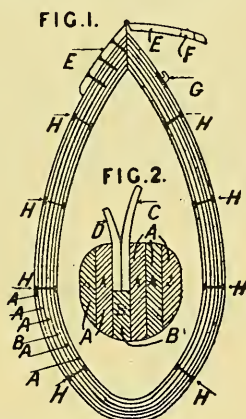
HARNESS AND SADDLERY.

Patents have been granted in all cases, unless otherwise stated. Drawings accompany the Specification where the abridgment is illustrated and also where the words *Drawings to Specification* follow the date.

A.D. 1901.

382. Brigham, D., Sankey, H., and Sheddan, W. Jan. 7.

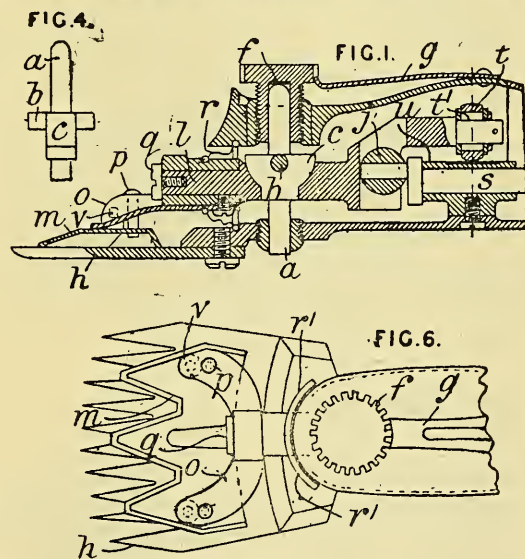
Collars, neck.—The roll of the collar is made of a number of suitably-bent wooden laths A, B, held together by rivets H and fastened at the top by a hinged piece E with a hole F for a pivoted stud G. The material C, D upon which the body is built is clamped between the laths.



884. Burgon & Ball, [Eyres, W. H.]. Jan. 14.

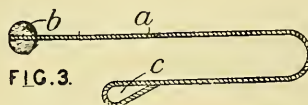
Horse clippers and the like.—The cutter *m*, between which and the comb *h* the hair or wool is cut, is connected by pins *p* to the fork *o*, which is provided with a sleeve for fitting on the end of the lever *l*, on which it is kept by a screw *g*. The fork *o* bears on the cutter *m* by means of adjustable and detachable feet *v*. The pivot pin *a* is attached to the lever *l* by making the pin with a head *c* shaped like the segment of a sphere to fit a similar socket in the lever. Lateral pins *b* rest in notches in the lever. The pivot pin is pressed down by a screwed cap *f* locked by a spring *g*. The lever is worked by a crank *j* on the shaft *s*, and an extension of the lever carries a roller *t* running on the bearing *u*. Antifriction rollers *t'* are placed within the roller *t*. Dust is

excluded from the apparatus by a canvas &c. cover *r* connected to the casing and fork *o*, or by a curved metal shield *r'* attached to the fork. The



lever may pass through the head *c*, or the head may be cup-shaped and formed with a square shank.

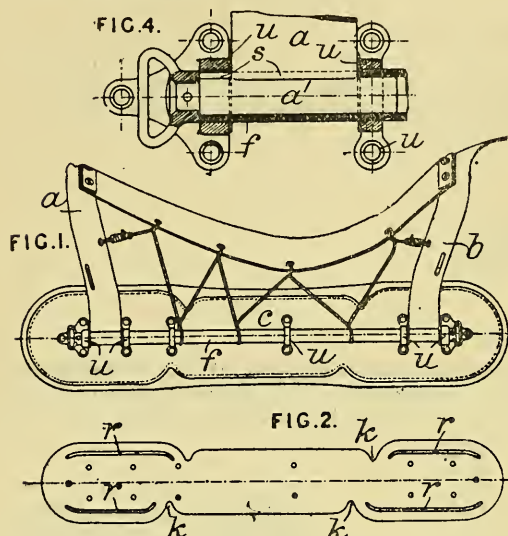
1135. Hornby, P., and Hornby, W. Jan. 17.



Halters.—One end of the rope or rein *a* for attachment to a manger &c. is fastened to a lead

or other metal ball *b*, and the other end is formed with a loop *c* through which the ball may be passed. The ball may be grooved to receive the strands of the rope, or the ball may be entirely encased by the strands.

1239. Stowasser, A. Jan. 18.

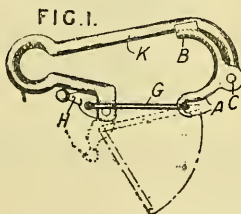


Saddles, riding.—The side bars *c* consist of steel &c. plates slotted at *r* and notched at *k* to enable the plates to adapt themselves to the particular horse's back. The plates *c* are fixed to the arches *a*, *b* by steel &c. tubes or rods *f* held in place by staples *u* riveted to the plates *c*. The arches are formed with short rods *a*¹, which fit into the ends of the tubes *f* slotted at *s* to allow the flat part *a* to pass.

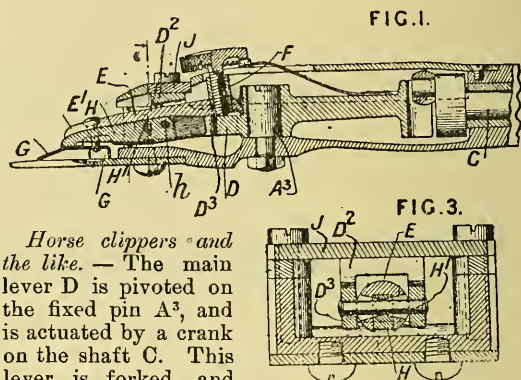
1293. Raven, R. E. Jan. 19.

Fastening traces.

Relates to improvements in the hook coupling described in Specification No. 19,750. A. D. 1897. The coupling is suitable for releasing the traces of fallen horses. Instead of the body part *K* being formed with the hooked end *A* for the link *G*, the part *K* is pivoted at *C* to a separate part *A*, *B*. On turning down the latch *H*, as shown in dotted lines, the loop *G* may be unhooked as in the previous invention; but the part *A*, *B* by a slight lateral pressure can now be made to turn on its pivot *C* to release the trace &c. although under tension.

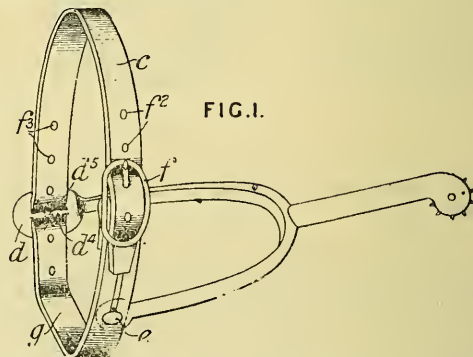


1361. Stewart, J. K. Jan. 21.



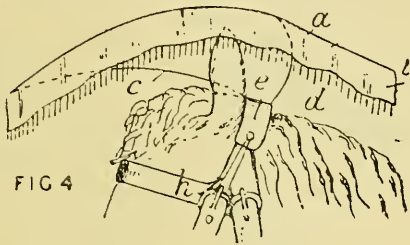
Horse clippers and the like.—The main lever *D* is pivoted on the fixed pin *A*³, and is actuated by a crank on the shaft *C*. This lever is forked, and between the arms *D*³ of the fork is loosely pivoted on the pin *H*¹ an arm *E*, also forked to form arms *E*¹, which bear on and engage with the cutter *G*. In a groove in the arm *E* lies the finger *H*, which also bears on the cutter *G*. The finger *H* is pivoted to the lever arms *D*³ by the pin *H*¹, and is also pivoted to the arm *E* by the pin *h*. The arm *E* and finger *H* are able to rock on a longitudinal axis, but cannot move laterally with regard to the lever *D*. The tension screw *F* screws through the arm *E*, and bears on the lever *D* as shown. The lever *D* has a bridge part *D*², which oscillates against the plate *J* fixed to the casing by screws. Antifriction balls &c. may be placed between the parts *D*², *J*. The tension is thus produced by rigid parts as opposed to spring parts.

1469. Smith, R. J., [Wiseman, J. W.] Jan. 22.



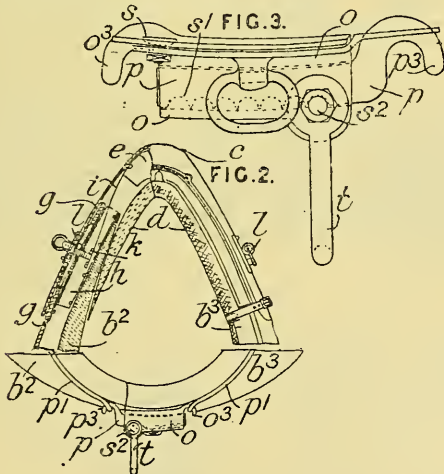
Spurs.—A single strap *c*, *g* is used to secure the spur to the rider's boot. The strap has a buckle *f* at one end, passes over a stud *e* on one branch of the spur, passes through two parallel slots in a plate *d* on the other branch of the spur, and is secured to the buckle *f*. Holes *f*², *f*³ are formed for the buckle *f* and for a pin *d*³ on the bar *d*⁴ between the slots. Instead of the stud *e*, a fastening like that at the other end of the spur may be used.

1889. Clark, W. S. Jan. 28.



Sun and weather screens.—The screen consists of a wire or other frame covered with canvas &c. *a* with or without a valance *i*. The screen may be supported by wires *c, d* fixed to a strip *e* which is tied on to the head by strings *h*, or a wire may extend from the rear of the screen and be supported by the collar and saddle. A free air space is always left between the screen and the horse's head.

2008. Thompson, W. P., [Ahrendt, J., and Diedrich, E.]. Jan. 29.

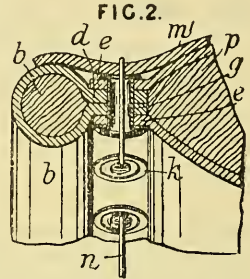


Collars, neck; fastening.—The collar is formed without hames, and is adjustable in length and width to fit different horses. The sides *b*², *b*³ fit into sockets in the neck part, which consists of an elastic piece *c* of sheet metal, celluloid, &c. beneath which is a stiffened neck pad *d* with an intermediate leather pad or cushion *e*. The part *e* carries a bar *i* with a ribbed plate *k* into which screws the bolt *l*. This bolt is swivelled to the part *c*, and slides in a slot in the upper covering part *g* of the side *b*² or *b*³, to which is fixed a box *h*. The side *b*² is adjusted by sliding it in the neck part and then turning the bolt *l* until the ribbed plate *k* is pulled into engagement with the ribbed under surface of the covering-part *g*. The lower ends of the sides *b*², *b*³ are united by a fastening which consists of a bolt *p* sliding in a socket *o*. The bolt and socket have extensions by which they are secured to the

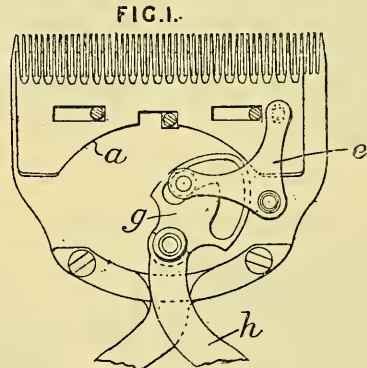
sides, and have hooks *o*³, *p*³ for the collar bands *p*¹. The movement of the bolt in the socket is limited by a screw *s* working in a slot, and the parts are secured by a pin *s*² engaging one of a series of notches *s*¹ in the bolt. The pin *s*² is carried by a link *t*, and has a notch which, when turned into position, enables the bolt *p* to be slid freely in the socket *o*.

2392. Gulline, H. L. Feb. 4.

Collars, neck; ventilation; pads for.—The rim *b* is attached to the body *p* by hollow rivets or eyelets *g*, which unite the flanges *d, e* and serve to ventilate the collar. The space for the hames can be varied by using washers *k* of different diameters. The sweat pad *m*¹ may be attached to the collar by a lace *n* passing through the eyelets.

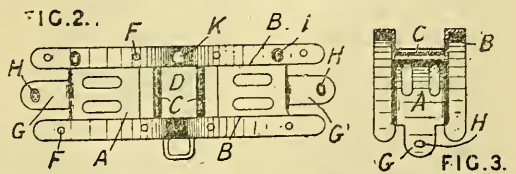


2514. Gregory, J. Feb. 5.



Horse clippers and the like.—By means of the V cam *g* and the bell-crank lever *e* two reciprocations of the cutter *a* are obtained for one reciprocation of the handle *h*. The same action is obtained by having the bell-crank lever linked to the bent end of the hand-lever.

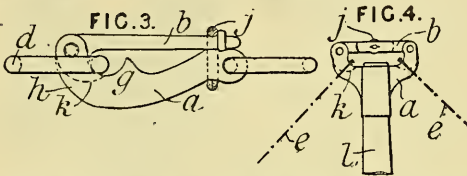
3531. Beckett, F. B. Feb. 19.



Saddles.—The tree of a gig or other saddle is made

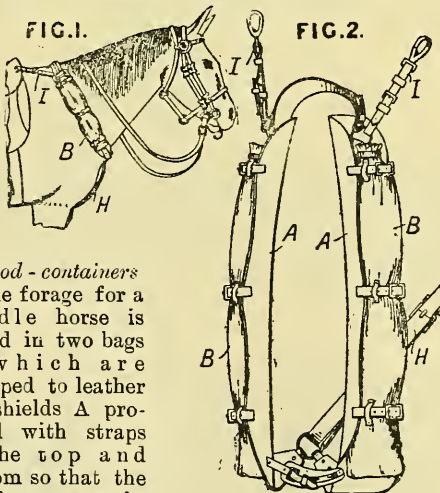
of one piece of cast or stamped steel &c. of the shape shown. The floor A of the back-band groove lies below the level of the sides B of J-section. Friction is reduced by rollers C in the opening D. The saddle flaps are attached by tongues G fitting into pockets and by rivets, screws, &c. through holes H, F. Screwed sockets may be made at K, I for the pedestal and terrets. The skirts are in one piece, thus forming a smooth channel top and bottom for the back-band.

3948. Brigg, T. H. Feb. 23.



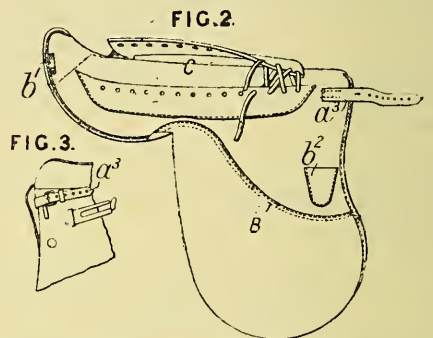
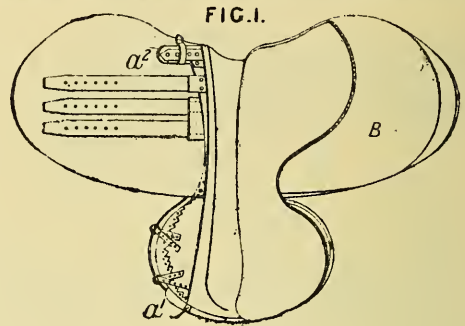
Fastening.—Relates to means for releasing fallen horses without cutting the harness. In the form shown in Fig. 3, the trace connection *d* engages with a piece *a* to which is pivoted an arm *b* provided with a horn-like extension *k* adapted to lift the connection *d* clear of the piece *a* when the arm *b* is opened. The arm is normally fastened to the piece *a* by a rubber ring *j* or an equivalent strap, and the projection *g* limits the motion of the connection *d* on the piece *a*. In the modification shown in Fig. 4, the end of the pole *l* is fitted with two pieces *a* over which engage the harness attachments *e*. The pivoted arms *b* have horn-like extensions *k* and are normally fastened together by a pin *j*.

4035. Millane, J. A. Feb. 25.



Food-containers
—The forage for a saddle horse is placed in two bags B, which are strapped to leather &c. shields A provided with straps at the top and bottom so that the device may be placed round the horse's neck. Straps H, I, attached respectively to the girth and saddle, keep the device in position.

4679. Allen, E., and Army and Navy Co-operative Society. March 5.

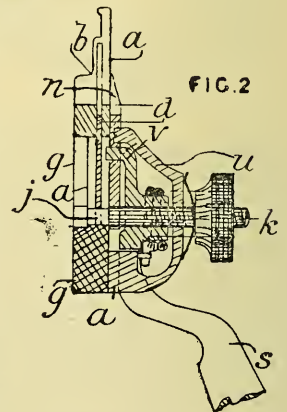


Saddles.—The panels B of a riding saddle are made detachable, and have a laced opening C through which padding may be introduced. The panel is attached by a loop *b'* fitting on to a projection *a'*, a pocket *b'* fitting on to the point *a'* of the tree, and a strap *a'* buckled as shown in Fig. 3.

4874. Kanzler, E. March 7.

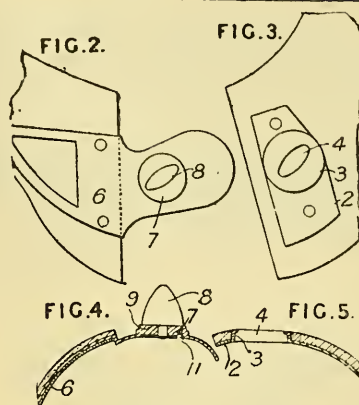
Horse clippers and the like.

—The fixed comb *a* is held by a T-headed bolt *j, k* to the bowl *u* of the handle, together with the reciprocating comb *n* and the operating-lever *v, s*. The comb *a* is formed with stepped teeth *b* to cut different lengths of hair, and with slots taking over the square posts which guide the reciprocating comb. The posts, and an internal plate *d* fitting tightly upon them, thus form guides for the fixed comb when it is adjusted. A back-plate *g*, nipped by wings on the sides of the fixed comb, lies under it and flush with the head of the bolt.



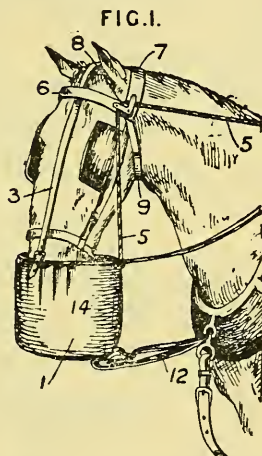
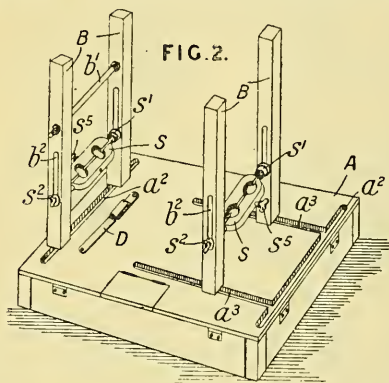
4998. Dobbs, G., and Dobbs, J. March 9.

Fastening horse-collars made with a divided top. One side of the collar carries a plate 2 provided with a socket 3 formed with an oval slot 4. The other side of the collar carries a plate 6 with a boss 7, 9 to fit the socket and slot and a turn-button 8 to lock the fastening. The motion of the turn-button is limited by a stop pin 11. The plate 6 may be hinged, and the turn-button may be slotted for a strap to keep it in its locked position.

**5090. Ellis, W.** March 11.

Nose bags; bridles; ventilation.

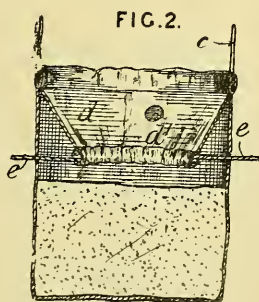
—The bag 1 of canvas &c. is kept in place by a front strap 3, side cords 5, and a strap 12. The strap 3 is attached to a head-stall made up of the straps 6, 7 and the throat-lash 9. At the junction of the straps 6, 7 are pulleys 8, over which the cords 5 pass to the hames &c. The strap 12 is secured to the collar or breast-plate, or, when the nosebag is not in use, serves to strap up the bag into a small compass. The front of the bag is puckered and stitched to a lining-strap, so as to form channels 14 for ventilation.

**5486. Ter Heggen, G., and Ladell, H. S.** March 15.

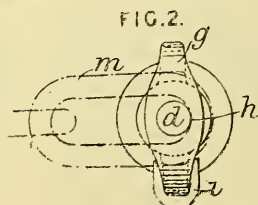
Animals, stocks and like appliances for holding.—Relates to an appliance for holding sheep while they are being sheared or medically or otherwise treated. The appliance consists of a base A formed preferably as a box or receptacle, with standards B adjustably secured in slots a², a³. Stocks S, formed in two parts secured together by a thumb-screw s¹, are fitted in sockets s² secured by nuts s³ in slots b² in the standards B. A bar b¹ is fixed to the two front standards for securing the sheep's head when the animal is standing, and a strap D is provided for securing the head when the animal is placed on its back. In a modification, the stocks S are arranged at the sides to secure one front and one back leg in each.

5419. Green, F. March 14.

Nosebags.—To prevent the waste of food when the animal tosses up the bag, the mouth of the bag is fitted with a piece of fabric d which can be drawn round the animal's nose by strings e, the ends of which pass through holes in the bag. Holes are formed at d' for ventilation.

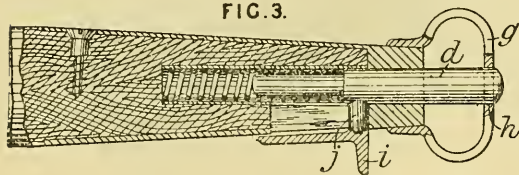
**5517. Reddell, A., [Hair, J.].** March 15.

Fastening traces to whipple-trees. The spring pin d is drawn back by the guided arm j attached to the thumb-piece i. The end link m of the trace is then



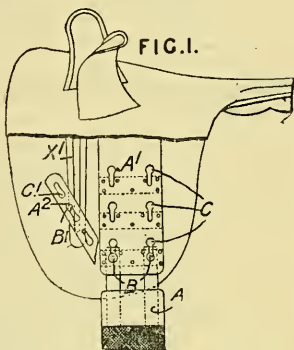
placed in the position shown in Fig. 2, and the piece *i* is released, allowing the pin *d* to pass through the link and the hole *h* in the bracket *g*.

FIG. 3.



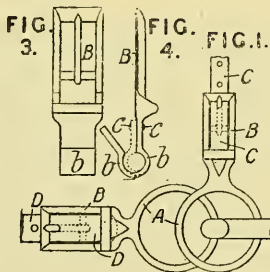
6067. Mayhew, F. W. March 22.

Fastening girths. The girth *A* of a lady's saddle is fastened on the near side by studs *B* or flattened hooks, which fit into keyhole or other shaped slots *C* in the girth straps or in the sweat flap *A'*. The balance girth *A''* is similarly fastened by key-hole slots *C'* fitting on a stud *B'* on the point *X'*.



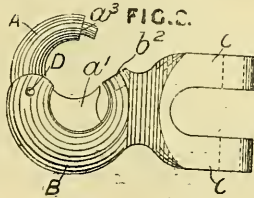
6182. Trifitt, J. C. March 25.

Bits; bridles; fastening.—The bit rings *A* or cheek bars are formed in one with the buckles *B* for the bridle cheek straps *C* and reins *D*, which are thus simplified as shown. In modifications, the buckle *B*, Figs. 3 and 4, is made with a hooked end *b*, which may be looped round the bit and riveted at *c*, or the buckle may be combined with a snap-hook for the same purpose.



6483. McGill, D. April 17.

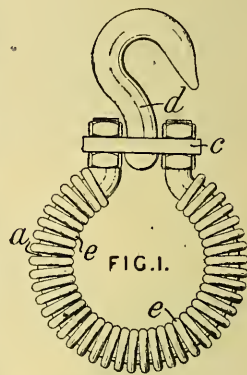
Fastening traces, hooks for. The hook consists of the curved part *A* pivoted at *D* to the part *B* provided with perforated lugs *C* for attachment to the collar. The part *A* has a curved and



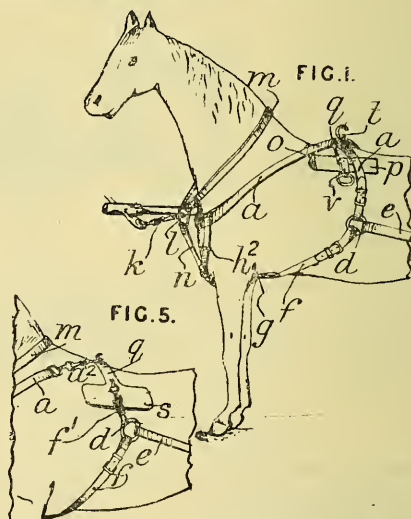
pointed tongue *a'*, which works in a slot in the part *B*, and also has a pin *a''* for a socket *b''*.

6823. Rodenkirchen, H. April 1.

Fastening.—Lashing rings, sling rings, trace hooks, and the like for use with slings for raising goods by means of ropes, and for other purposes where rings are used through which ropes or the like are passed, have a number of rings *e* threaded upon a ring *a* of circular section, the carrying-hook *d* being connected to the cross-piece *c* in such a manner that the hook can revolve upon its axis.



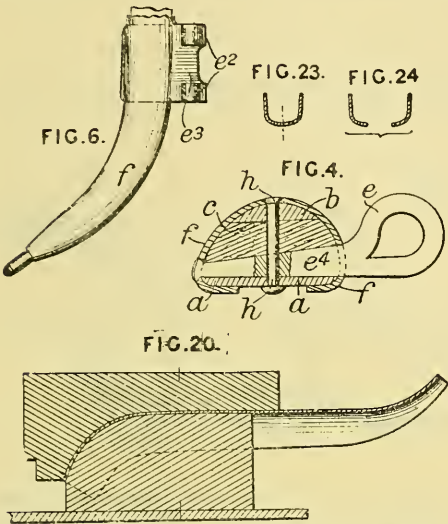
7101. Sengelaub, G. April 4.



Harnessing, systems of; saddles; collars, breast.—In the form shown in Fig. 1, a breast strap *a* is adjustably connected by a pin *t* to the saddle, and has its ends buckled to the rings *d* of the traces *e*. Straps *f* connect the rings *a* to a ring *g*, from which a forked strap *h* passes to the breast strap. The saddle consists of two cushions *o* attached to plates *p* connected together by a metallic bow *q*. In double harness, the end of the pole is connected by a strap *k* to a double loop *l*, to which straps *m*, *n* are connected. In single harness, the parts *k*, *l*, *m*, *n* are dispensed with, and the shaft-tugs are connected to loops *v*. In the form shown in Fig. 5, the ends of the strap *a* are connected by spring

hooks to a strap a^3 , fastened to the bow q , and the rings d are connected to the saddle by short straps f^1 . The saddle s may be replaced by a riding saddle.

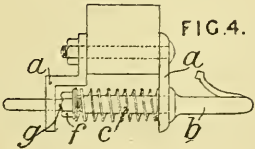
7251. Wheway, S. B., and Marsh, T. P.
April 6.



Collars, neck.—Relates to the manufacture of cart hames, and especially those cased in brass &c. Two metal bars a, b , Fig. 4, of the section shown and of the length and general shape of the finished hame, are welded together at each end and shaped with an eye at the lower end. These bars are then opened out to receive a strip of wood c between them. The eyes e, e^2 of the draught-hook, whether they are separate as shown in Fig. 4 or are both formed on a plate e^3 as shown in Fig. 6, are fixed by recessing the plate e^3 or shanks e^4 in the wooden strip c and riveting through with rivets h . The hame may be covered with brass or the like f . In this case the brass is bent round as shown, no nails &c. being needed. The edges of the strip lie on the flat underside of the hame. When applied, the strips have the form shown in section in Fig. 24. These strips are made by cutting through a strip of the section shown in Fig. 23, which is made by stamping or pressing a flat strip of brass between male and female dies and then curving or bending the ends by dies in the manner shown in Fig. 20.

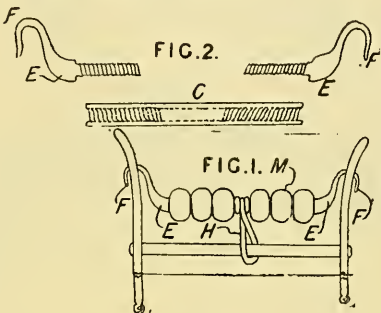
7280. Hammond, J. A. April 9.

Fastening traces, hooks for. The object is to relieve a horse from shock when starting to draw a vehicle. The shank of the trace hook b carries a nut f between



which and a bracket a is a spiral spring c . The hook is kept from turning by making the shank where it passes through this bracket of square section. A pin g keeps the nut in place. The rear end of the shank is supported by a second bracket a , and both brackets, which may be made in one piece, are suitably secured to the vehicle.

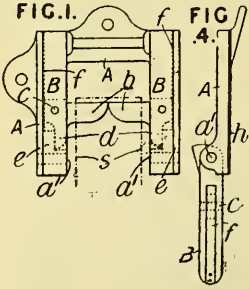
7351. Hill, T. W. April 9.



Bits.—The bit, which may be used alone or combined with a curb bit, as shown in Fig. 1, and used as a bridoon, has an expanding mouth-bar. In the form shown in Fig. 2, the hooked ends E screw into the mouth-bar C . In another form, the mouth-bar is solid and screws into sockets on the ends E , and, in a third form, one part slides in the other, being guided by a pin in a slot. Rings may replace the hooks F . The mouth-bar may be covered with rubber &c., which may take the form of balls M . A rubber band H may be used to connect the mouth-bars of the two bits.

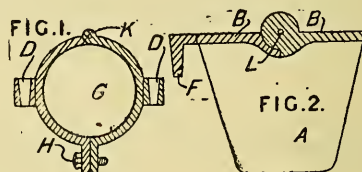
8052. Triffitt, J. C., Jackson, J. T., and Jackson, S. April 19.

Stirrup straps, suspending.—The stirrup leather s is suspended from a bar or bars b hinged at c to a frame B which is hinged at a^1 to a frame A fixed to the saddle-tree. Lugs d, e keep the bars b from turning downwards when in the position shown; but the bars b may turn upwards to liberate the stirrup leather when the rider is thrown in an upward direction. Should the rider be thrown sideways, the frame B turns down as shown in Fig. 4, and the bars open in a downward direction. Springs h, f keep the parts B, b from turning too freely.

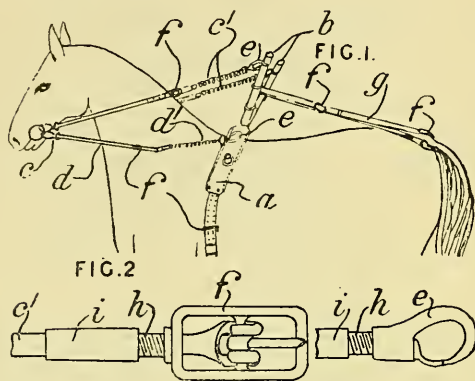


8322. Whall, C., and Pfeiffer, J.
April 23.

Nosebags.—The canvas bag A is attached to a frame B hinged at L so that the mouth of the bag may be closed when not in use. The bag is attached to the pole of the vehicle by a hook F, which fits into one of the two slots D in lugs on a ring G hinged at K and clamped to the pole by a screw H.



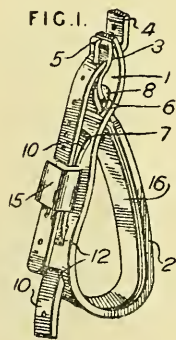
8708. Lack, F. April 27.



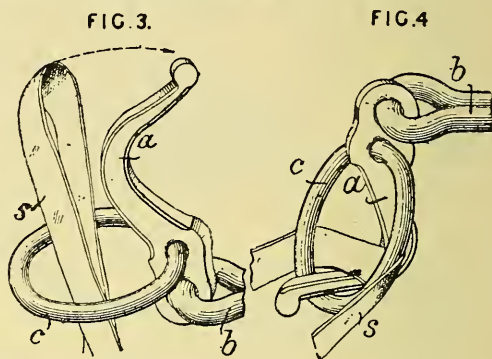
Horse breaking and training harness.—The dumb-jockey consists of the saddle a, the arms b of cane, whalebone, &c., the crupper strap g, and the two pairs of reins c, d, each of which has an elastic section c', d'. The reins are attached to the arms by snap-hooks. The elastic cords &c. c', d' are attached to the buckles f and hooks e by a screw socket i and a screwed tubular end h. The cords &c. are screwed into the socket i, and enter the tubular part h.

9059. Mead, C. B. Oct. 16, A.D. 1900,
[date applied for under Sec. 103 of Patents &c.
Act, A.D. 1883].

Tugs, shaft.—The loop 1, 2 is formed of a broad strap slotted at 3, 6, 7, and 12 and preferably lined at 16. The loop 1, 2 is prolonged to form a narrow strap 10, which is looped and threaded through the slots as shown. The buckle 5 for the backband 4 is supported by the loop 8 of the strap 10, and bears against the part 1, thus preventing wear on the backband 4. A keeper 15 connects the straps 4, 10.



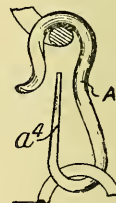
9107. Novella, A. M. J. May 2.



Fastening.—The hook or fastening for tethering or coupling animals by their bridles &c. comprises a link c and a hook a, the point of which cannot pass through the link. The hook has holes for the link and the fixing staple b. The strap s is attached to the fastening as shown.

10,031. Wiggin, W. May 15.

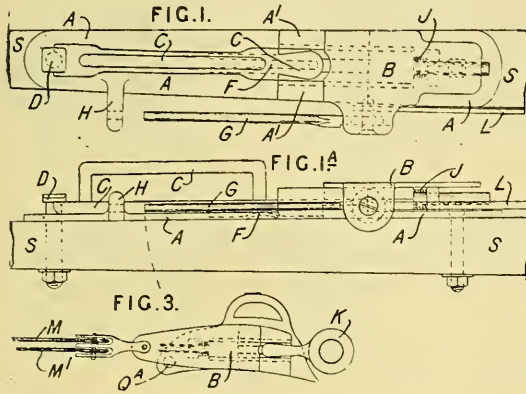
Fastening.—The double hook A for bridle bits &c. has the form shown and the spring tongue a' is free to move in either direction.



10,218. Mitchell, J. G. May 16.

Fastening; runaway horses, releasing.—Relates to releasing a runaway or fallen horse, and is shown in plan and elevation in Figs. 1 and 1A respectively, applied to the shaft S of a vehicle. The saddle chains, the tug chains, and the trapping chains are connected to the bow-piece C, one end of which takes under the headed bolt D. The other end lies between the undercut guides A' of a plate A, and is normally held in position by a tongue B, which slides on the guides and covers the end of the bow-piece. When the driver pulls the bar L, the tongue is forced back against the action of the spring J, and the uncovered end of the bow-piece is forced up by the spring F, whereby the parts are released. The bellyband is

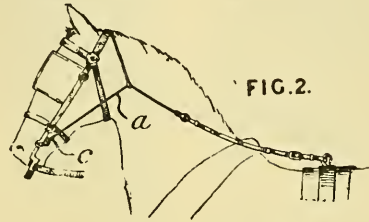
attached to a draw-bolt G pivoted to the tongue B and engaging with a projection H. In vehicles with poles instead of shafts, the chains from the



hames are connected to the pole-end by a similar attachment, and the two ends K, Q^A, Fig. 3, of

the hames are connected together by the spring-pressed tongue B, which releases the ends when the driver pulls the cords M, M¹.

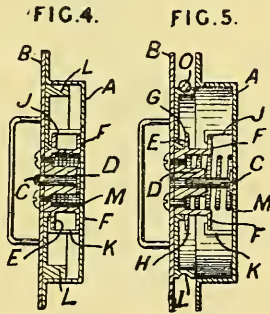
10,335. Nunn, J. H. May 18.



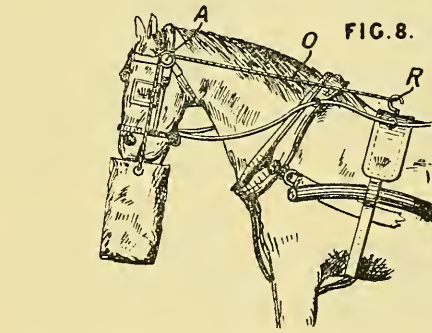
Bridles.—The bearing-rein has a part, such as *a*, made elastic. This part may consist of a rubber tube covered with plaited leather, or of a rubber cord, or of a coiled metal spring encased in leather. The rubber tube may be attached to the socket *c* by a screwed plug.

11,119. Wyler, B. F. May 30.

Bridles ; nose-bags, suspending. Bridle rosettes are formed of an ornamented box *A* and a base-plate *B*, connected together by a pin *C* fitting into the sleeve *D* and by hooks *J*, *K* engaging with a flange *F* on the part *D*. A spring *M* normally presses the parts *A*, *B* apart. By pressing



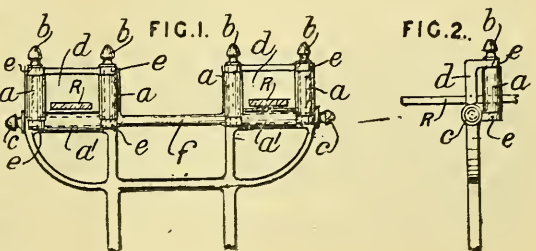
the part *A* inwards and then turning it, the hooks *J*, *K* may be made to pass through notches *G*, *H* and engage with the flange *E*, thus keeping the parts *A*, *B* together as shown in Fig. 4. A grooved roller *L* turns on the sleeve *D*, and, when the parts



A, *B* are opened out, the cord *O* supporting the nosebag may be passed over it. This cord is fastened to the hook *R* on the saddle, so that the horse can always reach his food by lowering his head.

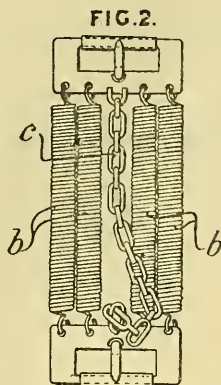
11,198. Wheeldon, H., and Holt, T. May 31.

Rein-holders ; terrets and like guide-rings.—Relates to rein guides for the terrets of harness saddles and the hames of horse collars. The reins *R* pass through guides *d*, of which the sides and base are formed by antifriction rollers *a*, *a'* carried on spindles *b*, *c*. The spindles *b* for the side rollers *a* are secured in lugs *e* which project slightly towards the driver from the plane of the other parts. The two guides may be connected by a bar *f*. In modifications, the top also may have a roller, and any of the others may be dispensed with.

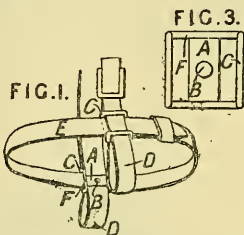
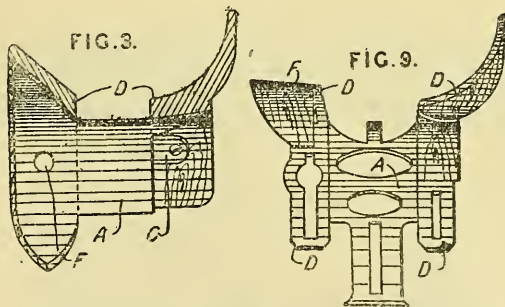


11,225. Steinbach, A. May 31.

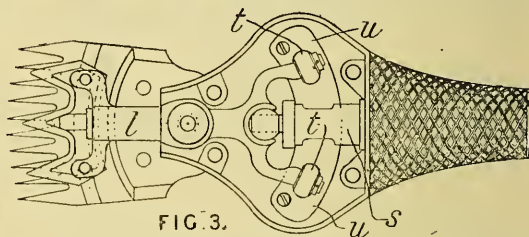
Fastening girths. The springs *b* of the spring buckle attachment for saddle girths are prevented from being overstrained by a chain *c*, which also enables the attachment to adapt itself to the form of the horse's body.

**11,283. Chambers, H. C.** June 1.

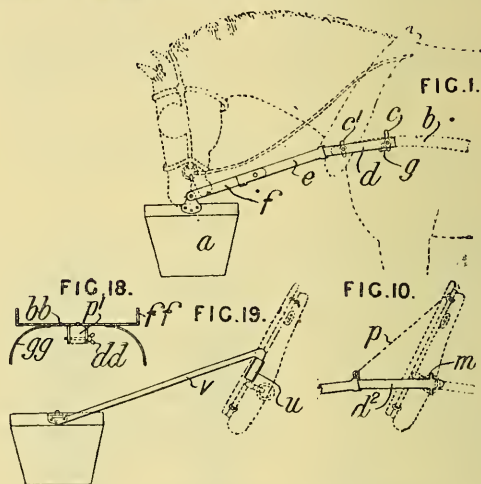
Fastening bridles. The noseband *E* of a bridle is fastened to the billets *D* by a looped fastening or buckle consisting of loops *C, C* connected by bars *F*, themselves connected by a cross-bar *A* carrying a pin *B*. This pin passes through one side of the billet and through the noseband, the other side of the billet resting upon the pin.

**11,496. Harwood, J. J., Harwood, J., Harwood, W., and Harwood, F.,** [trading as Harwood & Sons]. June 5.

Saddles.—The tree of a harness saddle is made of a sheet or cast metal frame *A* upon which are fixed the parts *D* of wood, papier mâché, woodite, &c. The part *A* has lugs *C* for the fixing-screws &c., and may be slotted for the attachment of the flaps. Holes are made at *F* for the pedestal and terret rings.

12,246. Hind, B. June 15.

Horse clippers and the like.—Consists in forking the inner end of the rocker bar *l* to enable it to carry the two rollers *t*, which run upon a path *u* provided below the line of the driving-shaft *s*.

12,290. Read, T. C. June 17.

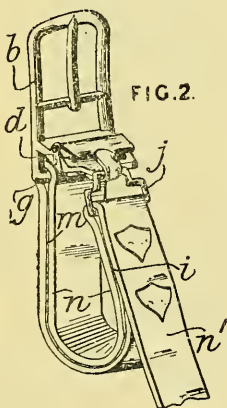
Nosebags and food-containers, supporting. The bag &c. is supported from the shafts, pole, collar, saddle, or other part of the harness leaving the animal's head free. Fig. 1 shows the bag &c. *a* supported from the shafts *b* by hinged and folding arms *d, e, f*. The arm *d* has rings *c, c'* to fit over the shaft, and is kept from coming off by a stop *g* or a spring bolt. In a modification, the arm *d* is made in two parts, one of which carries the rings *c, c'*, while the other is adjustably connected to it by a bolt and thumb-nut and a pin fitting one of a number of holes. In another modification, the arm *d* carries one ring *c* and a hook for engaging with the trace staple on the shaft. Fig. 18 shows a device for supporting two bags from a pole. The bags have eyes for the ends *ff* of the arms *bb*, and rest against the brackets *gg*. The arms *bb* are attached to the pole *p'* by a screw *dd*. Figs. 10 and 19 show supports for attachment to a collar. The end of the arm *d'*, Fig. 10, fits into a ring *m*, and is supported by a cord *p*. The arm *v*, Fig. 19, fits into a socket *u* in a piece clamped to the hame. Similar attachments may be made with a saddle &c.

12,344. Hakemeyer, C. June 17.

Fastening harness chains &c. The eye *d* of a hook is prevented from opening out when strained by forming the end with a head *g*, which is received in a recess *e* with a restricted opening *f*. The hook proper may be of any form, and the hinge pin *x* may be arranged in the position shown, or at right - angles thereto.

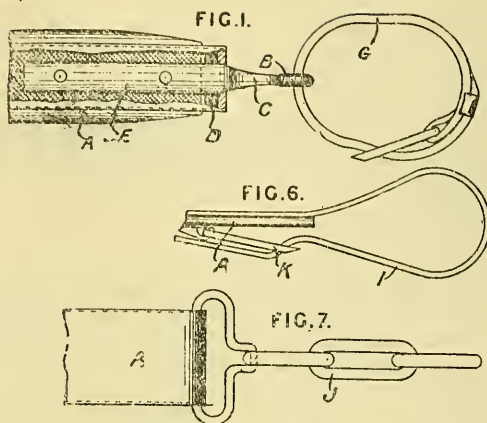
**12,352. Babin, A. June 17.**

Tugs, shaft; belly-bands.—The loop *n* of the tug is formed in one piece with the bellyband *n'*, and is connected to the bar *g* of the backband buckle *b* and to the link *j* which hooks on to the snap-hook *d* formed integral with the buckle. The shaft is introduced by unhooking the link *j* and opening out the loop. Metal strips *m*, *i*, connected to the buckle and link and riveted to each other and to the loop, give a certain rigidity to the loop.

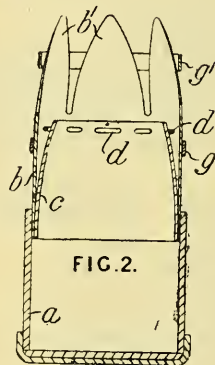
**12,399. Young, J. June 18.**

Breeching; fastening.—A breeching strap *A* is attached to the shafts of a vehicle by a strap *I*, Fig. 6, and buckle *K* or by a chain *J*, Fig. 7, or by the fastening shown in Fig. 1, the breeching being always arranged flat to the horse's hind quarters and being left attached to the vehicle when the horse is unharnessed. The fastening shown in Fig. 1 consists of a strap *G* which passes round the shaft and through a loop or eye *B* formed with a tang *E* for riveting it to the breeching. The tang has a cross-bar *D*, and the loop may have a neck *C*. A steel strip may be placed behind the tang *E*. The straps *G* may be replaced by the looped ends of a loin strap to prevent kicking.

(For Figures see next column.)

12,399.**12,597. Peters, W. C. June 20.**

Horse - boots.—The poultice boot consists of a lower receptacle *a* of leather &c., strengthened, if desired, by plates or bands of iron &c. In this receptacle are placed an animal's hoof and the poultice, either in a separate bag or otherwise. The top of the receptacle is closed by a canvas &c. extension *c*, provided with a draw-string *d*, which enters the fetlock to enclose the hoof. The part *a* is prolonged by the leather &c. part *b*, which may consist of several strips or of one piece cut with tongues *b'*. This part is fastened round the leg by straps &c. *g*, *g'*, so that the tongues &c. overlap.

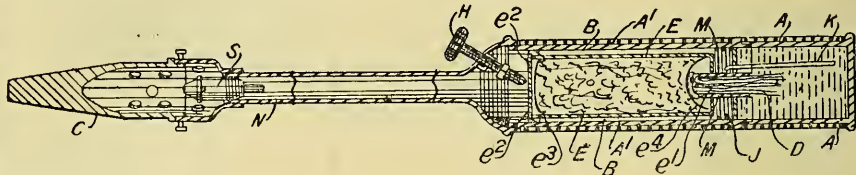
**13,381. Judah, M. July 1.**

Sun and weather screens.—Relates to the use of mica for rendering head coverings for horses sun-proof. The hat to be covered is first coated with a paste to which an antiseptic or copper sulphate is added. The mica is split to such a thickness that it may be bent to some extent without breaking. Pieces of mica of about ten to fifteen inches square are applied to the hat and pressed down, until the surface of the hat is covered with mica. Incisions extending from the edge of the mica towards its centre prevent creasing or folding, or portions may be cut out of the mica for this same purpose. The mica covering thus formed is coated with paste and one or more layers of mica are successively applied, the outer layer being varnished and covered with fabric. The mica may be applied to the exterior or interior of a hat or to both exterior and interior.

13,443. Pullen, W. July 2.

Singeing - apparatus.—A soldering-iron or horse-singeing apparatus is adapted to be heated by acetylene, which is generated in a chamber within the handle A¹. The carbide cartridge E is received within the handle, in a chamber B, which communicates with a water chamber A by means of a tube M enclosing a wick D. The cartridge has a perforation e¹ at one end through which the tube M passes, and perforations e² at the other end for the escape of gas, the perforations being protected at both ends by canvas discs e³, e⁴. A screw H serves to move the cartridge

FIG.1.



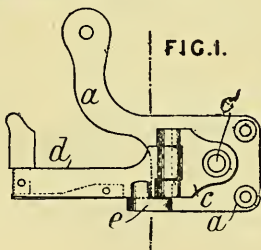
against a spring J to regulate the generation of the gas. The chamber A communicates with the gas by a pipe K. The gas passes by a pipe N to a suitably-fitted burner S near the hollow bit C. When used as a horse-singeing apparatus, the bit C is replaced by a singeing-burner.

13,521. Day, W. P. July 3. Drawings to Specification.

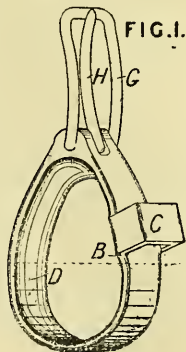
Saddles; collars, neck; pads for.—Saddle cloths or numnahs, false collars, &c. are made of a sheet of leather sewn to a sheet of woollen fabric, felt, &c. These cloths or pads are reversible, i.e., either side may be placed next the horse's skin.

14,044. Tompkins, W. J. July 10.

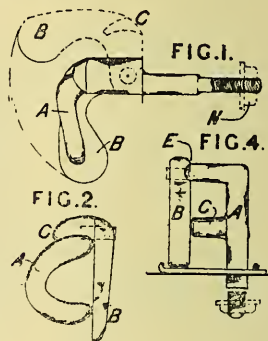
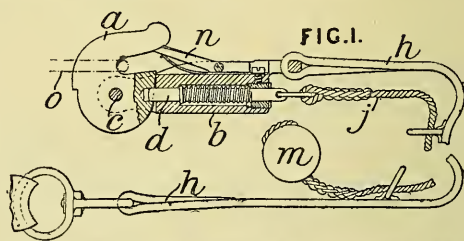
Stirrup straps, suspending.—The arm d for the stirrup leather is hinged to the piece c, which is pivoted at c¹ to the plate a fixed to the saddle tree. A fixed lug e normally supports the arm d. Should the rider be thrown, the bar d is raised from the lug e, and is then free to turn on the hinge and the pivot to release the stirrup leather.

**14,992. Stranaghan, W., and Twining, A. July 23.**

Tugs, shaft.—The tug is wholly of metal cast loosely to the buckle G, H and formed with a curved surface at D, one or more loops C, and shoulders B.

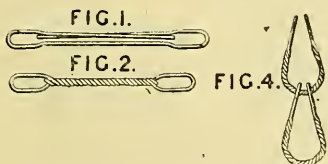
**15,111. Walley, J. S. July 25.**

Fastening traces. The trace in the case of single harness is secured by a hook A, Figs. 1 and 2, fixed to the bar by a nut N on the screwed shank. The hook is closed by a pivoted arm B with a stop C. In the form shown in Fig. 4, which is for double harness, the trace engages with the pin C, and the stop for the arm B is formed on the part A at E. The hook may be used for securing articles other than traces.

**15,604. Sankey, R. J. Aug. 1.**

Dog leashes.—The leash h is combined with a slipping-device consisting of a hook a pivoted at c to the body b and held in place by a spring-bolt d, which may be drawn back by the cord j provided with a ball m for the hand. The hook is normally closed by a pivoted spring tongue n. A spring may return the hook into its locked position, after it has been released to free the ring o attached to the dog's collar.

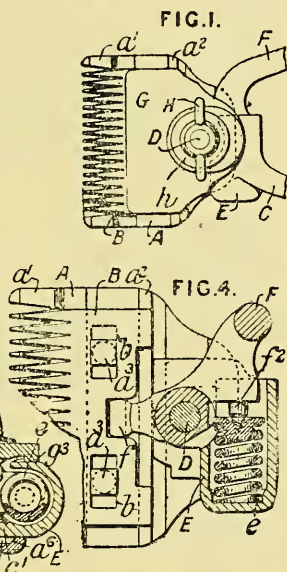
15,622. Lovell, A. K. Aug. 1.



Traces.—Links for trace chains &c. are formed by folding a piece of wire, as in Fig. 1, twisting the shank between the loops, as in Fig. 2, and then bending into U-shaped as in Fig. 4. In a modification, the ends of the wire, instead of overlapping, terminate at some distance apart.

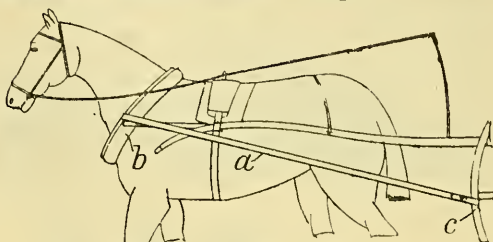
15,827. Carleton, C. Aug. 6.

Horse clippers and the like.—The comb plate A is formed with a ridge a^1 , which forms the cutting-surface of the teeth, and with a ridge a^2 . The cutter B reciprocates on these ridges, which are at the same level and lie above the rest of the uppersurface



of the plate A. In sharpening the comb teeth, both these ridges are ground down equally. The cutter is guided by the removable pins a^3 in the slots b , and is reciprocated by the handle F pivoted on the bolt D and provided with a projection f engaging with a slot in the cutter. The handle F is returned to its outward position by a spring e , which acts on a pin f^2 on the handle close to the pivot D, and is always under considerable tension. The socket E for the spring forms part of the fixed handle C, which is firmly secured to the comb A by the bolt D, which draws the projection c^2 on the plate c^1 closely into the groove a^6 in the comb. The bolt has a curved head, so that it may rock slightly on the comb, and all the parts are held together by the bolt and a nut H bearing on a spring washer h resting on the cap G. This cap bears on the socket E at g^3 , and on the cutter at g^1 . The cap has a socket for one of the pins a^3 .

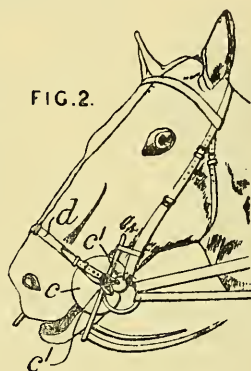
16,412. Tacon, W. L. Aug. 15.



Stopping and controlling runaway or restive horses.—A rope &c. a is attached at one end to the collar b , and at the other end to the wheel c of a vehicle.

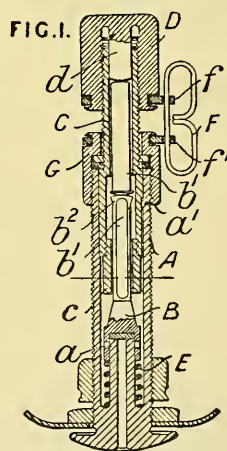
16,441. Henriques, E. N. Aug. 16.

Bridles.—The noseband d for controlling unbroken and difficult horses is made elastic, and is preferably attached to the bit by loops c^1 attached to a rubber &c. disc c provided with a slot for the mouth-bar.

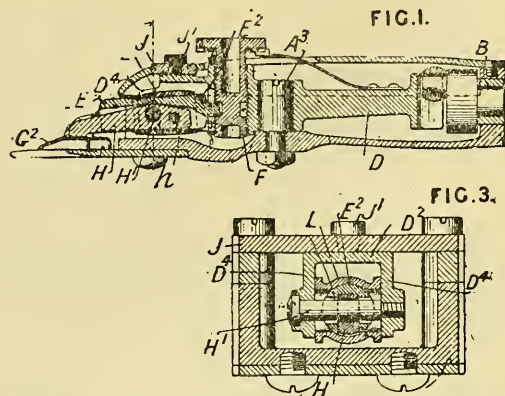


17,268. Lucas, H. Aug. 28.

Saddles.—Relates to an inflating-valve for saddles and similar purposes, and the valve is shown closed in Fig. 1. A nipple C is held within the casing A by the screw union G, and is prevented from relative rotation by the engagement of a projection a^1 on the casing with a slot in the nipple. The valve proper comprises a two-part stem b^1 secured to the cone B, which, during inflation, forms a non-return valve by contact with the gland c screwed into the nipple. The screw cap D has a central projection d , which normally presses the valve proper on to the seating a in the casing against the action of the spring E. The cap D is connected to the union G by loose rings f, f^1 sliding on a link F. The valve stem has ribs b^2 , which retain it in the nipple when removed from the casing.

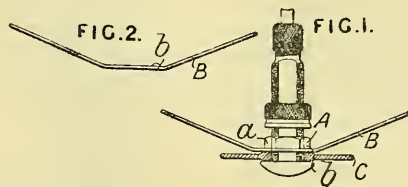


17,562. Stewart, J. K. Sept. 2.



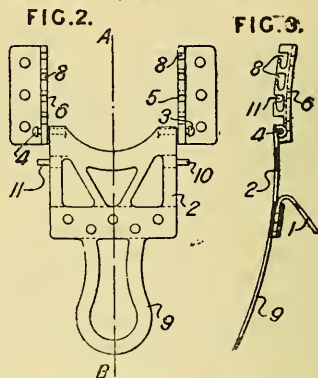
Horse clippers and the like.—The cutter G^2 is reciprocated by the forked end of a lever E , which has a rounded stem E^2 so that it may swivel slightly in the bush L . This bush slides vertically between the forked ends D^4 of the main lever D , pivoted at A^3 and vibrated by the cranked end of a shaft B as usual. The centre of the cutter G^2 is pressed upon by a finger H pivoted at h to the lever E . A bolt H^1 passes through the parts D^4 , L , E^2 , and H , and the opening for the bolt is enlarged to enable the part L to slide vertically and the parts E^2 and H to turn slightly axially. The tension is adjusted by a screw F in the lever D . This screw has an annular recess which engages with the end of the stem E^2 . The part D^2 of the lever D bears on a steel plate J fixed to the casing, and the bearing-surfaces are lubricated by a perforated thimble J^1 fixed to the plate J and filled with felt &c. soaked in oil.

17,686. Lucas, H., and Sloper, T. Sept. 4.



Saddles.—The lock-nut A , which secures the casing of an inflating-valve to a pneumatic saddle or the like, is prevented from becoming accidentally unscrewed, by providing the under surface with grooves a which engage with one or more projections b on the washer-plate B . An elastic connection between the washer-plate and the head of the valve-casing is given by the interposed air tube C , which may be supplemented by a rubber or other elastic washer. In a modified form, the projections are on the nut and the grooves on the washer-plate.

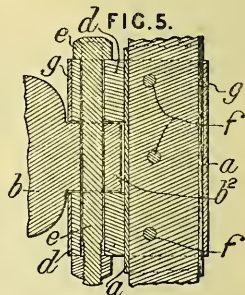
17,710. Kaučić, F. Sept. 4.



Fastening girths. Fig. 2 shows an elevation of the fastening for riding-saddle girths, and Fig. 3 shows a section on the line $A-B$. The girth 1 is attached to a plate 2 provided with a handle 9 and with pins $3, 4$ for entering notches 8 in angle-iron racks $5, 6$ fixed to the saddle-tree. The pins $3, 4$ are inserted in the proper notches, and then the girth is finally tightened by turning up the handle and plate, which are curved to bear against the saddle-flaps. Additional pins $10, 11$ are provided, in case the pins $3, 4$ should break.

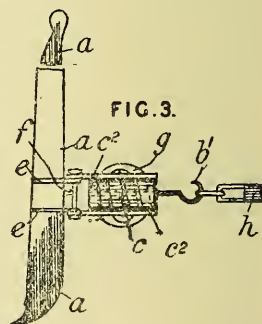
17,830. Temple, H. Sept. 6.

Collars, neck.—The hame hook b is attached to the hame a by a bolt e which passes through blocks d, d and the part b^2 of the hook. The blocks are held against the hame by a sheet-metal plate g , which has a hole for the part b^2 and wraps around the blocks and the hame to which it is fixed by rivets f .



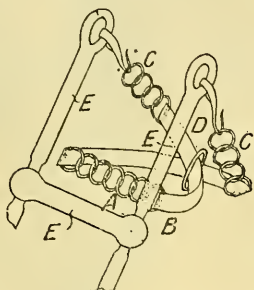
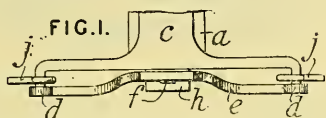
17,881. Yapp, W. Sept. 6.

Collars, neck; fastening.—The trace h is attached to the hame a by a spring connection to absorb shocks. The trace is attached to a hook b^1 , upon the stem of which is a coiled spring enclosed in a case c . The case has arms c^2 provided with eyes for a pin f , which also passes through eyes on the collars e round the hame. The case is also formed with or fixed to a plate g , which is secured to the body of the collar.

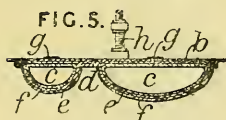


17,889. Willcocks, A. J. Sept. 7.

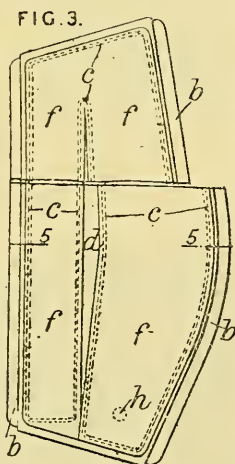
Bits; bridles.—A band B or the like is placed in the animal's mouth, and fastened at its ends to the cheeks of the ordinary bit E, either on the same or on opposite sides as shown. The centre of the band &c. may consist of a chain A or a bit. The ends of the band may be attached to the bearing-rein, or may be attached by chains C to the bit E. When crossed, the band B may pass through a ring or the like D, which may be attached to the noseband.

**17,943. Stuart, J.** Sept. 7.

Fastening pole chains. The part c bolted to the pole end a has projections d over which the pole chains j are passed and secured by the plate e which has an oblong slot fitted over the projection h on the part c. A split-pin f or other fastening locks the plate e.

18,051. Johnson, W. Sept. 10.

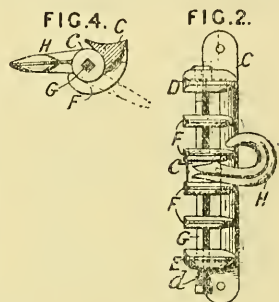
Collars, neck; pads for.—Relates to pads to be used beneath the collar. The pad consists of a strip or backing of india-rubber, leather, or canvas, &c. to which are attached two or more tubes inflated with air &c., one or more tubes being on each side, right and left. The backing is preferably in two parts, one part b for each side of the collar, and there is preferably one pad c, with two limbs, on each part b. The pads have inflating-valves h, and are kept in place by a



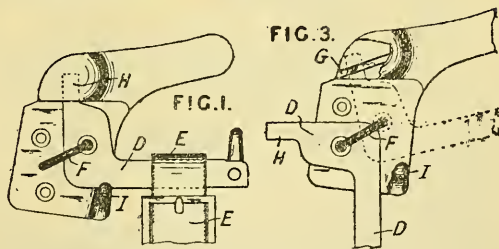
covering consisting preferably of an inner layer e of canvas and an outer layer f of leather stitched to the backing. The pads are preferably introduced through slits g in the backing, which are afterwards laced together. Ventilation holes may be made in the space d. The complete pad is attached to the collar by lacing or by buckled straps. The Provisional Specification states that the pad may be attached to the animal's neck by buckled straps.

18,090. Haddan, H. J., [Cincinnati Hume Co.]. Sept. 10.

Collars, neck; fastening.—Relates to hame tugs or hook fastenings for hames. The trace is attached to a hook H formed with a collar c which slides without turning on the bolt G. The bolt G passes freely through lugs D, E, and can turn in them when it is raised against the action of the spring d so as to lift a locking-lug from



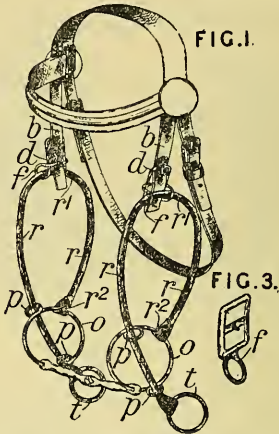
a recess in the lug D. The lugs D, E and other lugs F, which may be of hooked form, are attached to a plate C riveted to the hame. In the position shown in Fig. 2, the hook can neither turn nor move up and down as it lies between the locking-lugs F; but, by raising the bolt G, the hook can be turned until its shank is free of the lugs, as shown in Fig. 4, when it can be adjusted upwards or downwards to vary the direction of the draft.

18,304. Allsopp, E. Sept. 13.

Stirrup straps, suspending.—The stirrup leather E is supported by an L-shaped bar D loosely hinged to an eye F and supported by a lug I and a recess in which is a spring G bearing on the lug H of the bar. Fig. 1 shows the normal position, and Fig. 3 the position after the rider has been released.

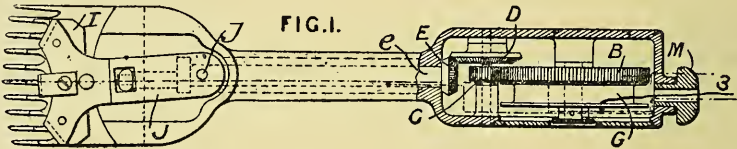
18,407. Woods, W., and McArthur, E. A. Sept. 14.

Bits ; bridles.—The bit rings *o* are formed with loops *p* at an angle, preferably a right-angle, to the plane of the rings. The buckle *d* of the cheek strap *b* is formed with loops *f* at right-angles to the plane of the frame. The planes of the loops *p*, *f* are roughly horizontal and vertical respectively. A strap *r* is attached to the ring *o*, passes through the loops *f*, *p* as shown, and terminates in a ring *t* for the rein. In a modification, the buckle has a single loop *f* as shown in Fig. 3. In a further modification, the strap *r* is firmly attached to an ordinary buckle on the cheek strap, and the part from *r*¹ to *r*² is dispensed with.

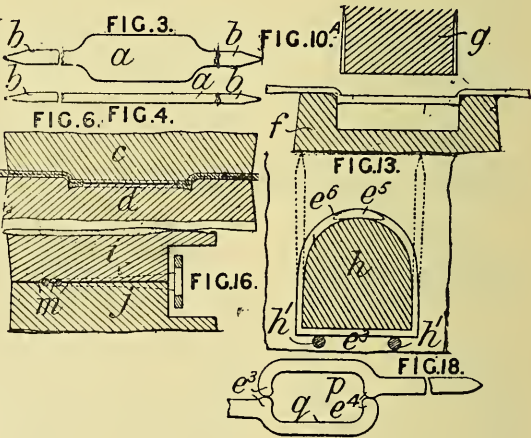


18,779. Barnes, J. C. Sept. 20.

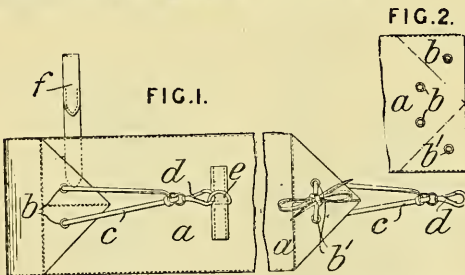
Horse clippers and the like.—The cutter *I* is vibrated by the forward movement of the clipper over the skin of the animal. A cord &c. *3* is fixed at one end to some external support, and is wound upon a drum *G*. As, therefore, the operator advances the clipper, the cord is unwound so as to rotate the drum, which is connected by a pawl and ratchet-wheel and toothed gearing *B*, *C*, *D*, *E* to the spindle *e*. The cutter is carried by a lever *J*, pivoted at *j* and actuated by a crank on the spindle *e*. A coiled spring rotates the drum to wind up the cord when the clipper is moved backwards, the cord passing through a flexible nozzle *M*. A weight may replace the spring, being attached to one end of the cord, which runs back and passes over a pulley.



19,259. Brooks, J. B., and Anslow, D. Sept. 27.



19,148. Jarvis, F. W. Sept. 25.

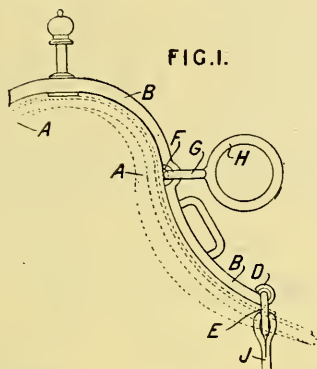


Food-containers.—A bag for containing a large supply of corn for replenishing a nosebag is chiefly for military use, and consists of a bolster-shaped canvas &c. bag *a* adapted to be closed at each end by laces *c* passed through eyelets *b*, *b*¹, which coincide when the corners are turned over. The ends are afterwards turned over, and kept in that position by the snap-hooks *d* engaging with the ring *e*. The bag is thrown evenly across the horse's withers, and kept in place by loops *f* through which the girth passes.

Stirrups.—The tread, or part thereof, is made in a piece with one or both sides of the bow, and the sides are bent to overlap and are then welded together with a scarf joint, the eye being formed through both overlapping parts. The parts are shaped by drop-stamping. Figs. 3 and 4 show a blank in which the sides *b* are in a piece with the tread *a*. This blank is acted on by dies *c*, *d*, which produce the form shown in section. The then central part is afterwards cut away to form the open space of the tread. The blank is next acted on by the dies *f*, *g*, which bend the sides up into a parallel position, as shown in dotted lines in Fig. 13.

The sides are next bent over the block *h*, the tread *e*³ resting on the pegs *h*¹. The overlapping ends *e*³, *e*⁶ are then welded together, and pressed between dies *i*, *j* which shape the eye. The webs or fins *m* are afterwards removed. A modified form of blank is made by placing together the two parts *p*, *q*, Fig. 18, so that they overlap at *e*³, *e*⁴, and then welding them together at these points.

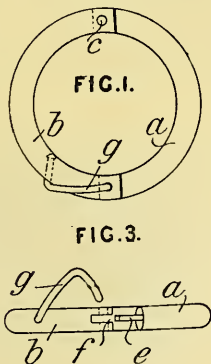
19,783. Noake, J. Oct. 4.



Saddles; terrets.—The pad or saddle for double harness consists of a padded leather part A and a narrow metal part B provided with a loop D for a ring E to which the "trace" J is attached. A recess is formed at F for the loose terret or rein ring H. This ring is formed with a D-shaped piece G, the straight part of which hinges in the recess F.

20,171. Stretton, G., and Hankin, J. Oct. 9.

Fastening.—Relates to rings for use in harness for releasing fallen horses and for other purposes. The ring consists of two curved parts *a*, *b*, hinged together at *c* and held closed by a pivoted pin *g* which passes through holes in a tongue *e* and the sides of the slot *f* into which the tongue fits. Instead of the tongue and slot, the parts may simply overlap.

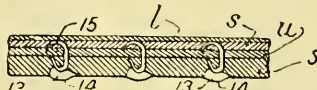


20,655. Boulton, A. J., [United Shoe Machinery Co.]. Oct. 15.

Fastening.—In the manufacture of harness and the like, a number of layers of material *S*, *u*, *s* are secured together by fasteners 15 having heads with depending points, preferably of the form described in Specification No. 9608, A.D. 1900, [Abridgment Class Nails &c.]. Each fastener is driven into a

separate hole 13 formed in the stock, its point is turned over, and the side lips 14 are forced down to cover the head of the fastener. When the

FIG. 4.



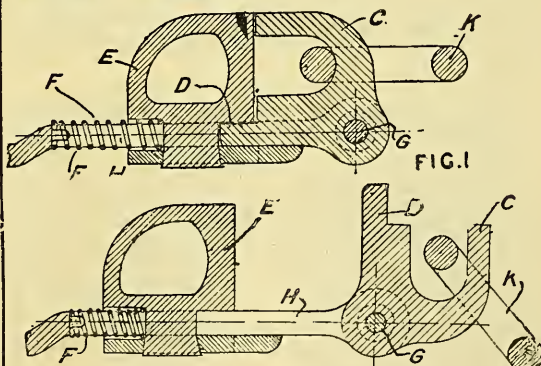
fasteners are close together, the ends of the openings may overlap, and each opening is preferably closed over a fastener before the next opening is made.

20,777. Brooke, J. Oct. 17.

Lassos.—Relates to an appliance for catching poultry and other small animals. A rod *a* is bent at the end to form an open-mouthed hook *b* for catching the leg of the animal. The hook may be strengthened by a cap *i* secured by a hollow rivet *i*¹, through which a cord may run to form a noose to be used in some cases. The rod *a* may be fixed or hinged to a solid handle, or may telescope within a hollow handle *c*, Fig. 1. Spring catches *d*, *e* are provided to engage a collar *a*¹ on the end of the rod *a*, and hold it in its extended or retracted position, as shown in full and in dotted lines respectively in Fig. 1. Other suitable forms of catches may be employed. Wires *f*, *f* may be secured in the handle *c* to prevent the rod *a* from turning.



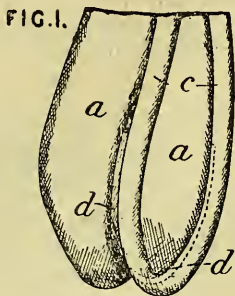
21,023. Gibbard, J. Oct. 21.



Fastening.—Draught chains &c. K are attached to the shafts or hames &c. by a slip-hook consisting of the hook proper C pivoted at G to the stem H upon which slides the locking-piece E. A spring F normally forces the piece E over the projection D, to hold the hook closed. The fastening is used for releasing fallen animals.

21,119. Bradley, G. H. Oct. 22.

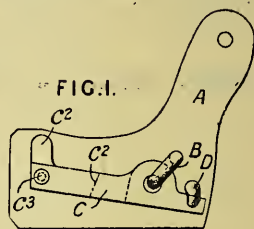
Collars, neck.—A plate *d* of channel &c. section is let into the space between the forewale *c* and body *a* at the bottom part of the collar. A more secure fit is thus ensured to the hames.



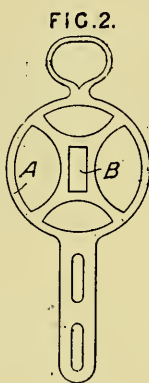
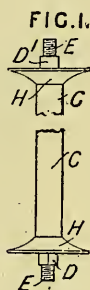
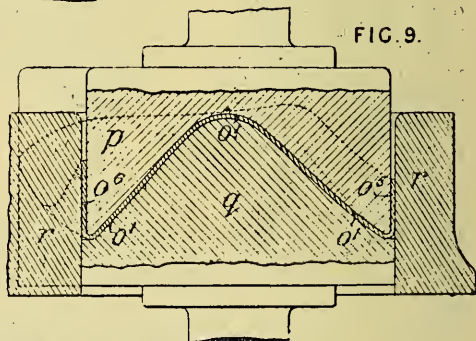
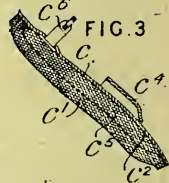
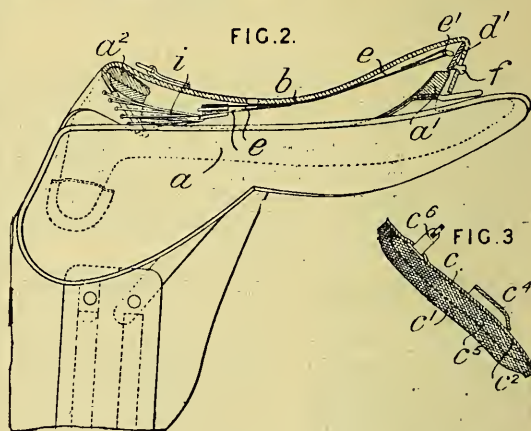
the bridle may be readily converted into a stall collar, or the bridle and stall collar may be worn together.

21,382. Biebuyck, G. Oct. 24.

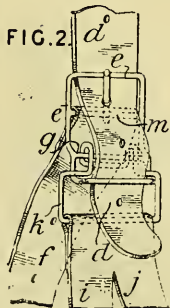
Stirrup straps, suspending, safety saddle-bars for. The stirrup leather is supported by a bar *C* connected to the base-plate *A* by a staple *B* and a hook *D* open at the bottom. The bar carries an L-shaped latch *c*², pivoted at *c*³. The stirrup leather is freed by the turning down of the latch *c*², or by the turning up of the bar *C* so as to become free from the hook *D*.

**21,194. Triffitt, J. C., Jackson, J. T., and Jackson, S.** Oct. 22.

Bits.—The object is to enable a dealer to supply more readily the exact form of bit required. A number of separate cheeks and mouthpieces are kept in stock, and these are so made that they may be readily fitted together. In the form shown, the mouthpiece *C* is attached to the cheeks *A* by washers and nuts on the parts *E*. The parts *D*, *D*¹, either round or square, are loosely or rigidly secured in the slots *B*. The flanges *H* prevent the horse's lips from being trapped in the joints. In another form, the mouthpiece is connected to the cheeks by pins through holes in the mouthpieces and in lugs on the cheeks. The Provisional Specification states that the shank of the bit may be so formed that the bridle billet may be readily slid from one loop to the next.

**21,676. Martin, P. A.** Oct. 29.**21,351. Kubin, F. E. von, and Kubin, H. E. von.** Oct. 24.

Bridles.—The strap *d*, attached above to the crown strap, browband, and throat latch in the usual way, is fastened to the buckle *e* of the stepped form shown. The cheek straps *i*, *j* of the bridle are connected to a hook-like frame *k*, which is hooked over the bar *g* as shown so as to be readily removable. The cheek and other straps of a stall collar are buckled to the strap *f* attached to the bar *m* of the buckle *e*. Thus



Saddles, riding. The detachable seat *b* is made of blocked leather, and is fixed to the head *a*² and cantle *a*¹ of the tree *a* by the hook-section ends of the seat, assisted at the pommel by laces *i* connecting the seat to the end of straining-webs *e* fixed at their rear ends to staples *e*¹ on a metal strengthening-plate *d*¹. The fastening of the cantle end of the seat may be assisted by buttons &c. *f*. The

detachable panels shown in Fig. 3 consist of a layer of felt c^1 stitched at the edges to a leather sheet c^2 with an intermediate padding c^3 of layers of serge, kersey, &c. The panels are attached to the tree by pockets c^4 and fastenings c^5 . Fig. 9 shows the dies p, q, r for blocking the seat o^1 . When the arched central part is flattened out, the vertical flanges o^5, o^6 incline inwards towards one another. The dies q, r may be in one piece.

22,892. Hey, H. E., and Crozier, H. B.
Nov. 13.

Stirrups.—To facilitate mounting, the stirrup is provided with a sliding frame B, upon the bottom bar of which the rider may place his foot. The frame has pins d sliding in slots c in the legs A. After mounting, the rider pushes up the frame with his foot, a catch holding it in place.

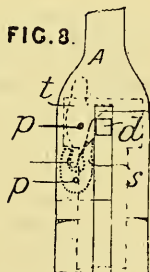
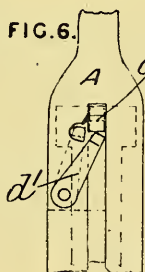
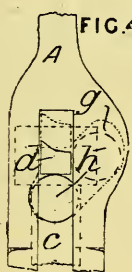
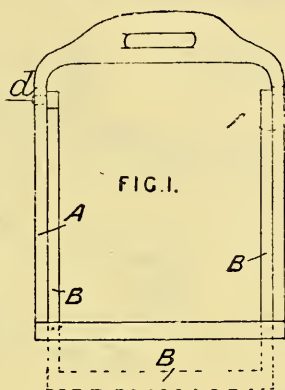
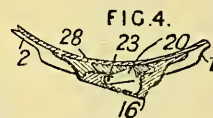
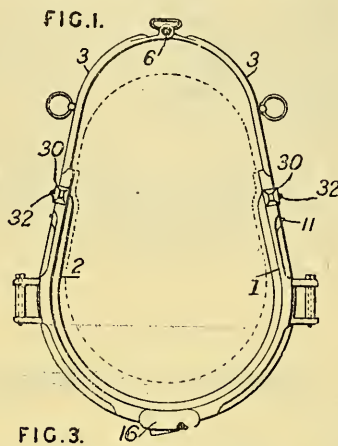


Fig. 4 shows one form of catch, in which a disc h rests across the slot c , or can be pushed back into a recess g . Fig. 6 shows another form, where the pin d is supported by a loosely-pivoted lever d' . Fig. 8 shows another form, where the pin rests on a catch s . This catch is actuated by a second catch t , which, like the first, turns on a pivot p . The Provisional Specification describes a fourth form, in which the sides of the frame B are slotted and adapted to spring outwards so as to rest on projections on the legs A.

23,670. Difo, H., and Cole, A. D. Nov. 21.

Collars, neck; fastening hames. The hames are adapted to be altered simultaneously in a lateral and vertical direction, so as to fit collars of different sizes. The dotted lines in Fig. 1 show the size to which the hames may be contracted. The upper parts 3, 3 are hinged together at 6, and the lower parts 1, 2 are connected together by a fastening

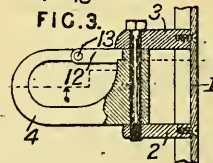
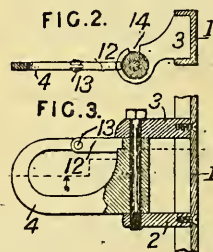
consisting of a spring dog 20 of wedge shape, which engages in a similarly-shaped recess in a tongue 28. The dog 20 is contained in a housing 16, and is operated by a thumb latch which has a spindle with



a squared part for the hole 23. The tongue 28 and housing 16 are carried by the sides 2, 1 respectively. The parts 3 slide into the parts 1, 2, and are adjustably fixed thereto by a screw 32, which passes through a cross-bar 30 on the part 1 or 2 and enters one of a series of holes 9 in the part 3. A second screw 11 serves as a stop.

23,671. Difo, H., and Cole, A. D.
Nov. 21.

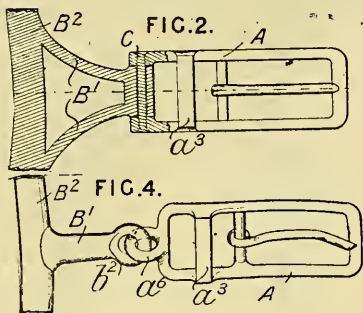
Fastening traces to hames. A hook 4 is pivoted between lugs 2, 3 fixed to the hame 1. The hook has a latch 12 pivoted at 13 and taking beneath the lug 3. To open the hook, it must be turned until the latch is opposite the gap 14.



24,872. Bird, S., Mason, W., and Nicklin, G. Dec. 6.

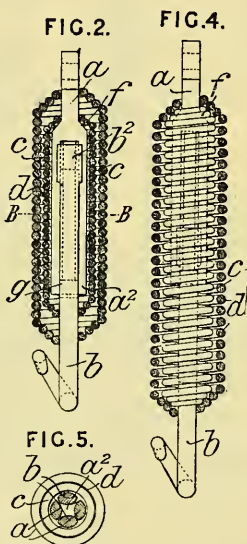
Collars, neck; fastening.—The trace is connected to the hame B² by a buckle A, which is hinged on a pin C to the hame draft B¹. The buckle has a trace-end retaining-loop a^3 . In a

modification, the buckle and hame draught are connected by eyes b^2 , a^6 .



25,319. Burberg, O., and Mühler, F.
Dec. 11.

Fastening traces.
Relates to a spring connection between the trace and the vehicle. The device consists of two slotted bars a , b surrounded by two or more coiled springs c , d of different strengths, the weaker being nearer the centre. The bars slide together as shown in Fig. 5, the cross-pieces a^2 , b^2 preventing them from coming apart. These bars have shoulders f , g for bearing on the innermost spring. This spring alone comes into action for light shocks; for severe shocks, the outer springs are also extended as shown in Fig. 4.

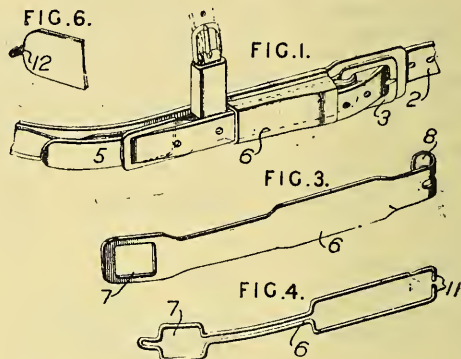


and provided with elastic bands e , f , g . The pad carries at the back a brush d , and terminates in a



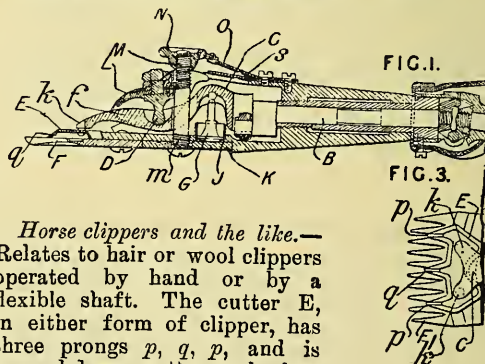
finger bag b faced with some soft material suitable for the application of polishing-cream &c.

25,983. Church, E. I. Dec. 19.



Fastening.—The object is to prevent the loose end of a strap, after it has passed through a buckle, from flapping about. The invention is specially applicable to fastening traces to breast straps. The loose end 5 of a trace &c. 2 is kept in place by a loop 7 on a spring strip or wire frame 6. The piece 6 is kept in place by a hooked end 8, Fig. 3, or hooked ends 11, Fig. 4, which engage with the portion of the strap passing over the bar of the buckle 3. In another form, a single hook 12, Fig. 6, is used to engage with the hole in the strap for the buckle tongue.

26,403. Wolseley Sheep Shearing Machine Co., and Austin, H. Dec. 27.



Horse clippers and the like.—Relates to hair or wool clippers operated by hand or by a flexible shaft. The cutter E , in either form of clipper, has three prongs p , q , p , and is pressed down on the comb plate F by pins k , k^1 on the lever C ,

25,675. Kell, G. Dec. 16. *Drawings to Specification.*

Clothing for animals.—Horse cloths or rugs are made of any suitable knitted material.

25,835. Love, L. A. K., and Love, W.
Dec. 18.

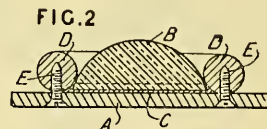
Cleaning and polishing apparatus for.—An appliance to be used on the hand for cleaning and polishing harness and the like comprises a palm pad a faced with selyt, chamois leather, &c. c

these pins bearing at points about one-third of the distance from the prongs *p* to the central prong *q*. The lever *C* in machine-driven clippers is driven by a crank on the shaft *B*, and turns on the pressure pin *D*, which is carried by the plate *L*. This plate is hinged at *f* to the parallel sides of an opening in the casing, and is pressed down by the nut *N* on the bolt *M*, which is screwed at *m* so as to serve to fix the plate *K* to the flat bottom of the casing. The plate *K* serves as a bearing for the lower end of the rocking-post *G*, supported laterally by the tube *J*. To facilitate the removal of the lever *C*, the case is provided with a removable plate *s* fixed by the screws of the spring *O* which locks the nut *N*.

26,762. Becher, R. C. July 5, [date applied for under Sec. 103 of Patents &c. Act, A.D. 1883].

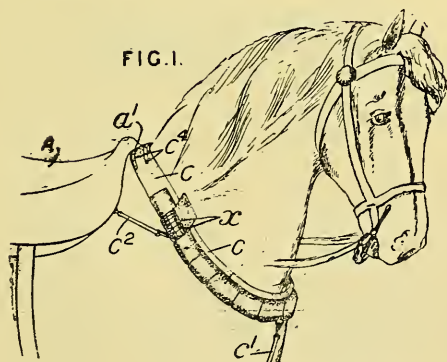
Bridles; breeching; ornaments for unspecified articles.

—Relates to ornaments for blinkers, face-drops, the hip straps of breeching, &c. A glass setting *B* with a polished metallic backing *C* is fixed to the leather *A* by a ring *D* of wood, celluloid, &c. secured in place by screws &c. *E*.



A.D. 1902.

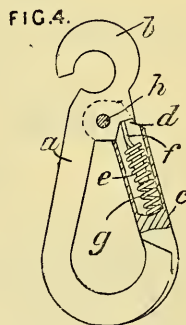
311. Wilson, T. G. Jan. 4.



Martingales.—The neck strap *C* is provided with loops for cartridges *x*, which are kept in place by flaps buttoned over them. The ends of the strap *C* or bandoleer are buckled together by straps *C1*, and the bandoleer is connected to the saddle *A* by a snap-hook at *a1* and by straps *C2* with snap-hooks. The strap *c1* fastened to the girth is also hooked to the bandoleer. The bandoleer can thus be readily detached from the horse and thrown over the rider's shoulder.

379. Peters, W. C. Jan. 6.

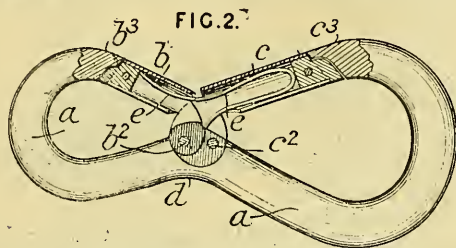
Fastening.—The hook or link consists of two hooked parts *a, c* pivoted together at *h* and overlapping as shown. The part *b* is formed with a hook *b* or an eye and with a shoulder *d*, and the part *c* has a socket *e* for the spring *g*, which pushes the pin *f* against the shoulder *d* to close the hook normally. The hook *b* may be replaced by a second pair of arms *a, c*.



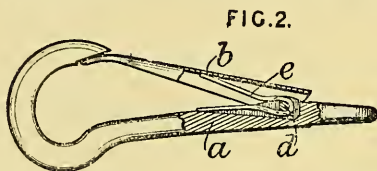
849. Lewis & Co., S., and Sleigh, C. Jan. 11.

Fastening, double pole hooks for. Separate latches *b, c* are used for the double-hooked part *a*. These latches are pivoted on pins *b2, c2* through overlapping wings on the latches. A single spring *e*, bent as shown, closes both hooks, but allows each to be opened separately. A separate plate spring

may be used for each latch, or a coiled spring may be used.

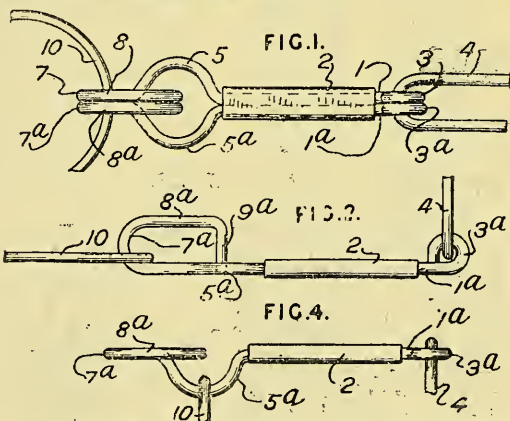


850. Lewis & Co., S., and Sleigh, C.
Jan. 11.



Fastening, hooks for. The latch *b* of a billet hook for harness &c. is made of sheet metal of trough section, and is pivoted at *d* to the body *a*. A doubled plate spring *e* or a coiled spring holds the latch closed.

913. Lovell, A. K. Jan. 13.



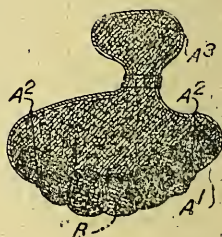
Fastening bridles, hooks for. The hook consists of two members held loosely together by a sleeve 2 or ring &c. Each member consists of a stem 1, 1^a with a curved part 5, 5^a and an eye 3, 3^a for a link 4. The curved part is bent to form the hooked part 7, 8 or 7^a, 8^a, 9^a. Figs. 1 and 2 show the hook closed and holding the ring 10. To open the hook the link 4 is turned down into the position shown in Fig. 4, the ring 10 is pushed to the right and the curved parts 5, 5^a are turned until they abut against one another. The parts then occupy the position shown in Fig. 4, and the hook is open.

1625. Maussner, F., and Gordon, A. J.
Jan. 21.

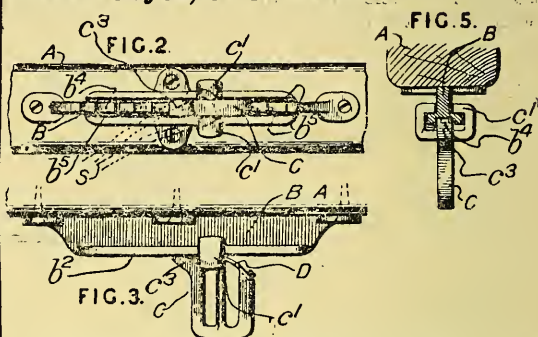
Collars, neck.—The fore and after wales are

covered with a casing A³ of leather &c. open at the back to allow the pad B of hair &c. to protrude as shown. The edges A¹ of the casing are turned inwards and the edges of the pad are stitched to them and to the body of the collar. Stays A² keep the edges A¹ in place.

FIG. 2

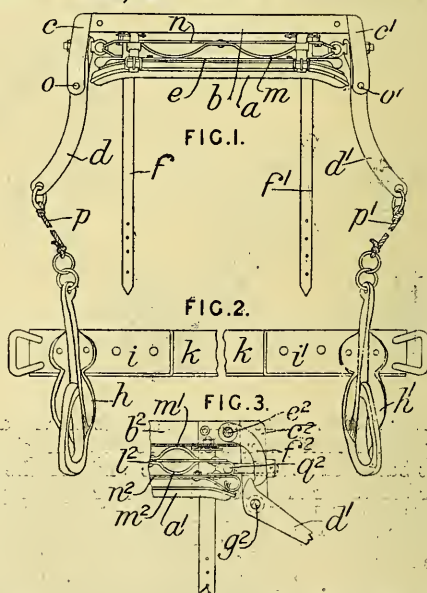


1683. Joyce, J. C. Jan. 21.



Fastening breeching. The breeching-strap S is attached to the shaft A of a vehicle by a loop C, provided with a catch or pawl c³ which is forced by a spring D into engagement with the teeth b⁴ of the piece B fixed to the shaft. The piece B is substantially of T-section, and the loop C has lugs c¹, which engage the flanges b². The pawl c³ is of L-section, the sides sliding in grooves on each side of the teeth b⁴.

1853. Witte, E. Jan. 23.

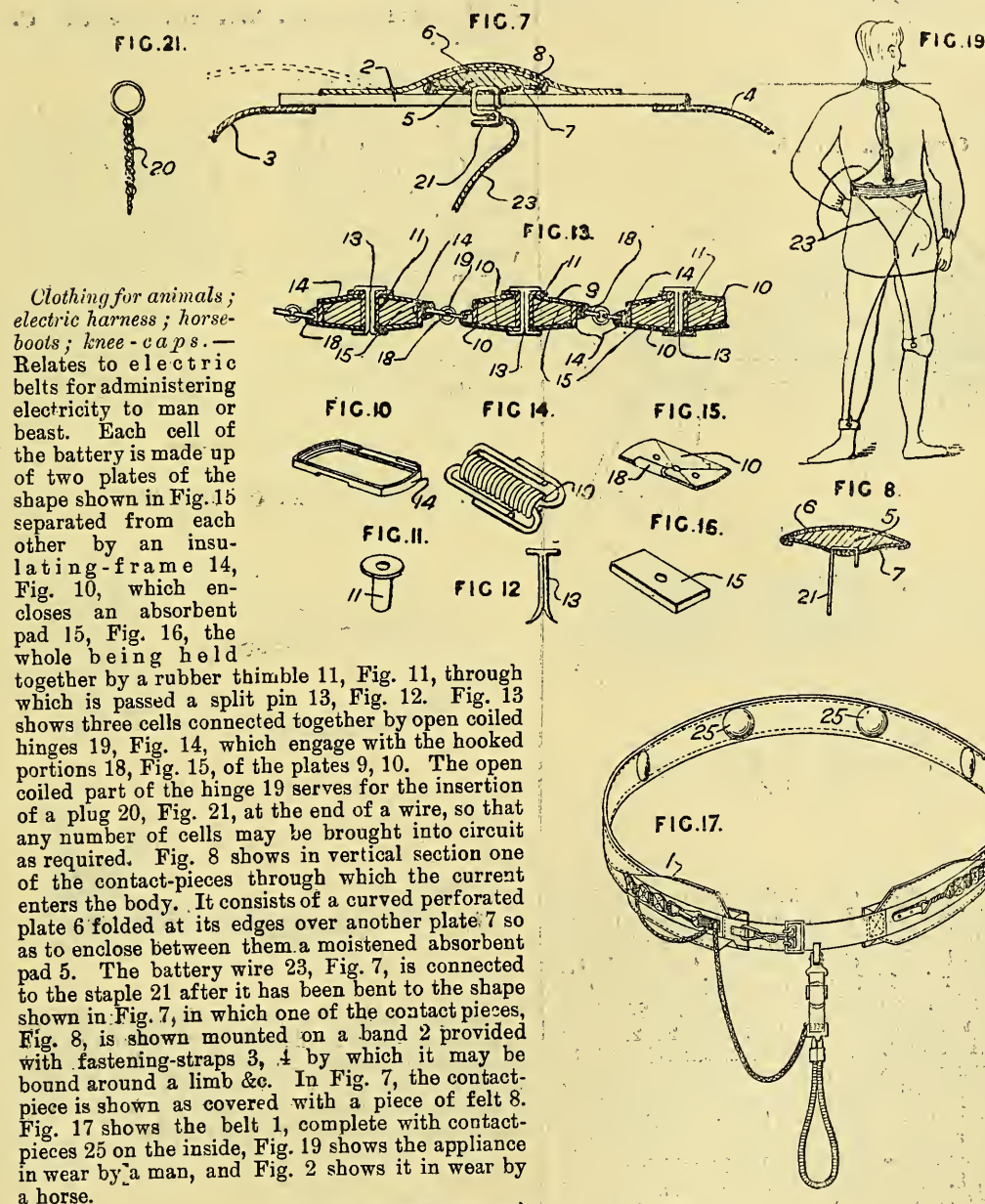


Yokes, neck.—The yoke consists of a metal bar *b*

and a leather and felt cushion *a*, connected together by a spring frame. This frame, in the form shown in Fig. 1, is connected by eye-bolts to the levers *d*, *d'*, pivoted at *o*, *o'* to the rearward-projecting prolongations *c*, *c'* of the bar *b*. The levers *d*, *d'* are attached to the head harness *p*, *p'*, itself connected to the hooks *h*, *h'* riveted to plates *i*, *i'* on the back-band *k*. The traces are attached to these hooks. The frame mentioned above

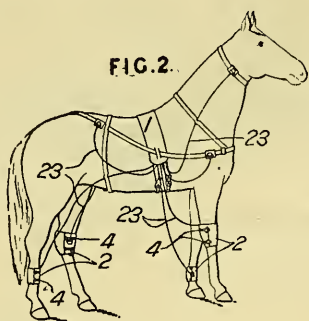
consists of flat bars *n*, *e* united by springs *m*. The straps *f*, *f'* are for attachment to the animal's horns. In the form shown in Fig. 3, the spring frame connecting the front bar *b'* and pad *a'* consists of bars *l'*, *n'* and the springs *m'*, *m''*. The spring frame is connected by hook bolts *q'* to levers *f'*, pivoted at *e'*, and bearing against the levers *d'* pivoted at *g'* to the arms *c'* of the front bar.

2248. Lake, H. H., [Spalding, S. J.]. Jan. 28.

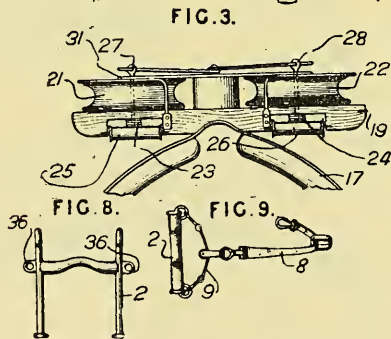
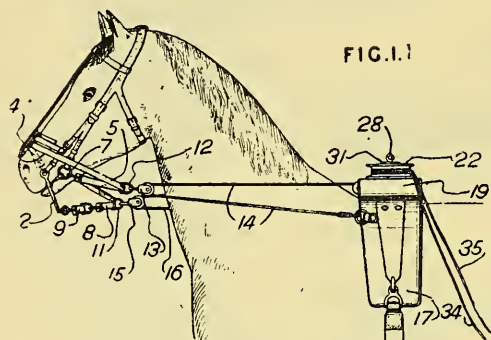


(For Fig. 2 see next page.)

2248.



2953. Graf, A. Feb. 5.

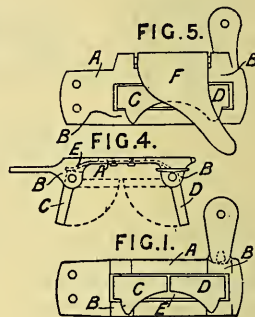


Horse breaking and training harness.—The lungeing-reins 34, 35 are wound round rollers 21, 22 which turn on pins 27, 28 passing through the plate 31 and block 19 fixed to the saddle 17. The bridle reins 14, 16 pass over antifriction rollers 25, 26 and are wound round rollers 23, 24 which are fixed to and turn with the rollers 21, 22. By pulling the reins 34, 35, therefore, the reins 14, 16 are wound up slowly and with increased power. The power is still further increased by passing the reins 14, 16 over rollers 13, 15 and carrying them back for attachment to the saddle. The rollers 13, 15 are attached to links 12, 11 which run on straps 5, 8. The strap 8 is connected at one end to a link 9 connecting the lower ends of the bit 2,

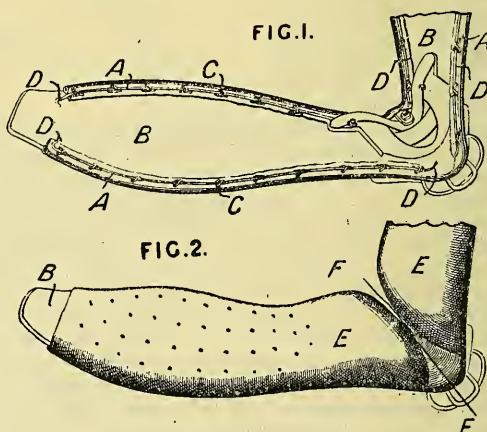
and at the other end has a snap hook for one of the rings 7 of the snaffle. The strap 5 is attached at one end to the other snaffle ring 7 and at the other end to the top of the curb bit after passing over the nose-piece 4. Fig. 1 shows the arrangement for running the horse to the left. The straps 5, 8 would be reversed for running the horse to the right. With wild horses, the strap 5 is guided through the snaffle ring and is fixed in the eyelets 36, Fig. 8.

3055. Bridge, W. W., and Heath, C. Feb. 6.

Stirrup straps, suspending, safety saddle-bars for. The stirrup strap is hung on the bars C, D pivoted to projections B on the base-plate A, so that they may open outwards as shown. A spring E normally holds the bars closed. For additional security a lever F may be arranged to fold down over the bars C, D.

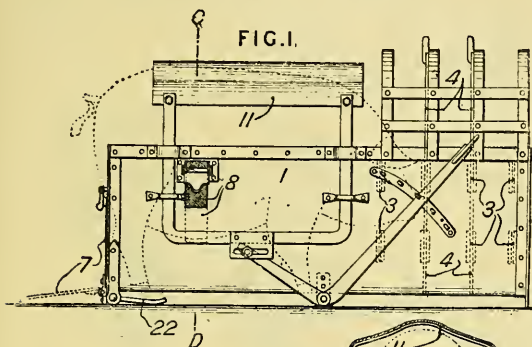


3712. Whisker, F. C. Feb. 13.



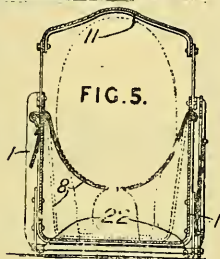
Saddles.—In harness saddles the leather facings A are attached to the flaps B by wire loops C, and the separate panels E are laced to the longitudinal wires D. The gullet F is covered with leather. The facings are made by doubling a leather strip over a paper roll and sewing it together.

4087. Hüttenrauch, F. Feb 18.

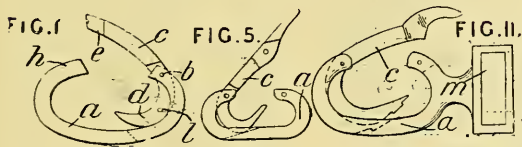


Animals, stocks and like appliances for holding.—Relates to apparatus for use in breeding cattle or domesticated animals.

Fig. 1 shows a side elevation of the apparatus and Fig. 5 shows a cross-section on the line C, D of Fig. 1. It consists of a casing 1 in which the female animal is placed, an adjustable bellyband 8 being provided to prevent it from lying down, and an adjustable saddle-piece 11 to prevent the weight of the male from injuring the female. The rear end of the apparatus is provided with movable legs 22 so that the apparatus can be raised or lowered to allow for any difference in the height of the two animals. The front end of the apparatus is closed by two vertically-sliding lattice gates 4, which can be placed in any of a number of grooved pieces 3 according to the length of the animal. The rear end of the apparatus is closed by a folding gate 7, which can be turned down, as shown in dotted lines in Fig. 1, to form a gangway for the female animal when entering the apparatus.



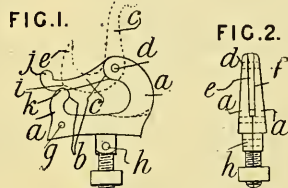
4125. Briggs, F. J. Feb. 18.



Fastening traces. Relates to a coupling-link or hook which is stated, in the Provisional Specification, to be applicable in connection with traces. The link or hook consists of a C-shaped body-portion *a*, both ends of which are slotted, and a bridge-piece *c* pivoted to the body and having tongues at each end to engage in the slots. The bridge has a hook *d* at one or both ends, corresponding in shape to the body, and is locked by

snapping over a projection *h* in the bottom of the slot, by a pin *l* engaging a slot, or by a cottar pin passed through holes in the body and the bridge. The tongue *e* may be of wedge shape, and the bridge may be formed with a lever extension for opening it, as shown in Fig. 5. The body may be formed with a rectangular loop *m*, as shown in Fig. 11, where a modified locking arrangement is also indicated.

4991. Briggs, F. J. Feb. 27.



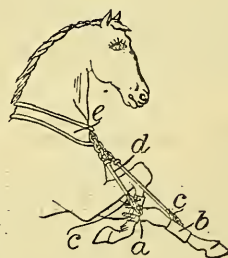
Fastening bearing-reins &c. The hook is formed in two parts *a, a'* riveted together at *g, h*. In the slot *f* there is pivoted at *d* an S-shaped piece *c, e*. When the hook is closed, the part *c* fits into a notch *k*. The part *e* has a projection *i* which snaps past the end *b* of the part *a*. To release the rein &c., the end *j* is knocked up.

5093. Kluth, A. O. H. Feb. 28. Drawings to Specification.

Clothing for animals.—Instead of being made of material of close texture, horse rugs are formed of cotton or other suitable material, woven honey-comb fashion or reticulated. A border is sewn on to the openwork fabric.

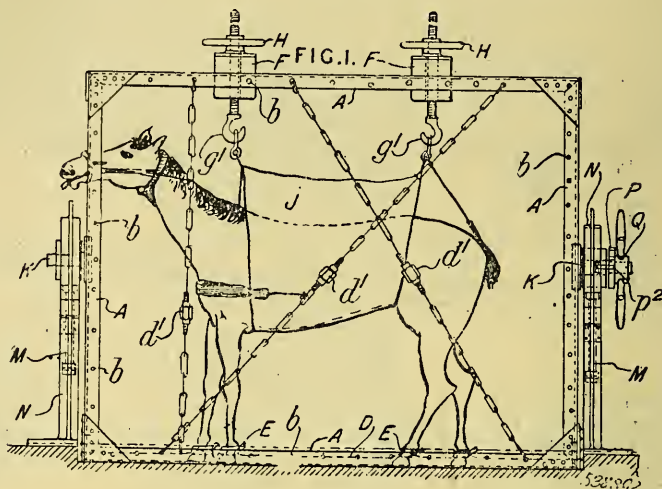
5265. Gibson, G. E. March 3.

Horse-training harness.—Straps *a, b* are attached beneath the knees or hocks and are connected by india-rubber cords &c. *d* to a strap or collar *e*. The cords have spring catches at *c* for attachment. The Provisional Specification states that the elastic cords may be attached to the body by a roller.

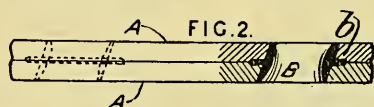


5388. Woodruff, H. March 4.

Animals, stocks and like appliances for holding.—The horse to be operated upon is secured to the frame A by hobbles E on a horizontal chain D and by a sling J connected to hooks g^1 carried by blocks F sliding on the top of the frame. The hooks may be adjusted by hand-wheel nuts H. The frame A is built up of angle-iron &c., and is narrower at the top than at the bottom. Holes are made at b for chains D, which may be used to support a mattress &c. The chains are tightened by long nuts d^1 engaging right and left handed screws. The frame A carries trunnions K which turn in bearings adjusted in the supports N by screws M. The feet of the supports N are at a higher level than the bottom of the frame, which is recessed into the ground so that the animal has not to step up into the apparatus. The frame may be rotated by turning one

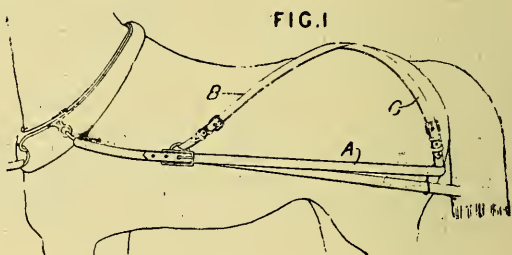


of the trunnions by the arms Q, and is fixed at the desired inclination by a catch p^2 engaging a notched disc P fixed to the trunnion.

5945. Walley, J. S. March 11.

Fastening.—Eyelets for use with buckles &c. in double leather traces, straps, and belts are provided with an inclined passage B, and a central flange or rim b for retaining them between the two plies A.

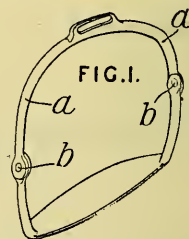
The Provisional Specification states that, with extra tugs, the breeching may form a combination kicking-strap.

**6408. Schwarz, G. A., and Meister, H. E.** March 15.

Knee-caps; materials.—Sponge cuttings are sewn in the manner of scales on gauze or other material pervious to liquid. The sponge surface thus produced is sewn or quilted crosswise and the reverse side may be covered or lined. The material is used in the manufacture of knee-caps for horses &c.

6943. Munby, E. M. March 21.

Stirrups.—Each side a has a hinge or pivot at b, to facilitate the release of the rider's foot after a fall.

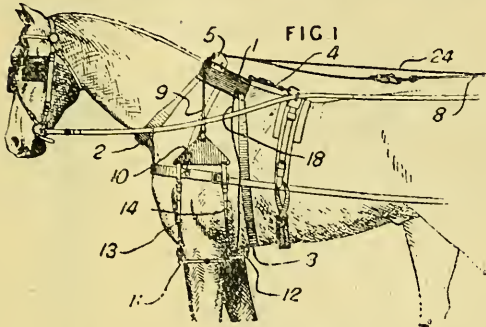
**6917. Stirling, R. J.** March 21.

Breeching.—The breeching-strap A is supported by crossed straps B, C, attached as shown. Where the straps B, C cross they may be sewn together or divided and sewn to a ring. In single harness, the strap B may be attached to the shaft or shaft-tug, no crupper being required. In double harness no crupper or saddle is required. The strap B may be attached to the trace. The invention is applicable to collar or to breast-plate harness.

7270. Klein, M. March 25.

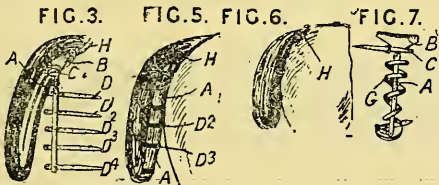
Hobbles; stopping and controlling runaway and restive animals.—A runaway or restive horse is stopped or controlled by a pair of hinged rings or

hobbles 11, 12, which are lowered from the position shown by pulling the cord 24, so as to release a catch, and then releasing the cord 8, 9, so as to allow the weights 10 to fall. When the weights



fall the hobbles fall also, being attached to the weights by straps 13, 14. As the hobbles fall, they are drawn together by cords 18, which pass through an eye on one hobble and are attached to an eye on the other hobble. In a modification, these cords 18 are replaced by cords attaching each hobble direct to the breeching &c. The catch above-mentioned is hinged to a projection 5 on the saddle 1, which may be of leather lined with aluminium. Straps 2, 3, 4 keep the saddle 1 in place. The device may be employed instead of the usual hitching-devices.

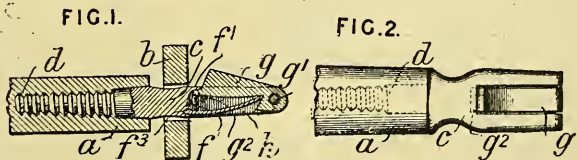
7600. Gavitt, H. E. March 29.



Tail ties.—The tie is for giving the docked effect shown in Fig. 6. It consists of a strap A attached to the crupper loop H by a broad strap B, a short strap C, and transverse straps D to D⁴. All the straps have buckles. The end of the tail is passed through the loop C, and the straps D &c. are buckled round the tail, as shown in Fig. 5, the hair being afterwards spread out to conceal the straps. Fig. 7 shows a modification in which the straps D &c. are replaced by a single strap G

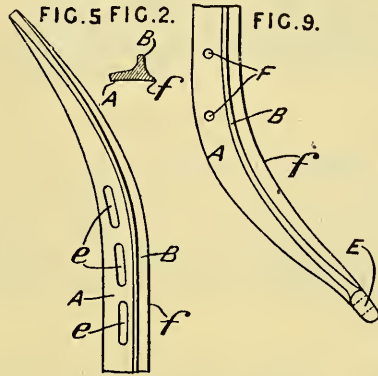
8750. Freeland, W. Jan. 27, [date applied for under Patents Act, A.D. 1901].

Fastening traces. The trace *b* is fastened to the whipple-tree *a* by a forked pin, hollowed at *c* for the trace and screwed at *d* to enter the whipple-tree. The trace is kept in place by a spring catch *g* pivoted at *g*¹ in the fork. The catch or dog *g* has a lug *g*² which can move between the lugs *f*¹, *f* of the pin. A notch is made at *f*³ and the dog is cut back, as shown, to receive the spring *h*



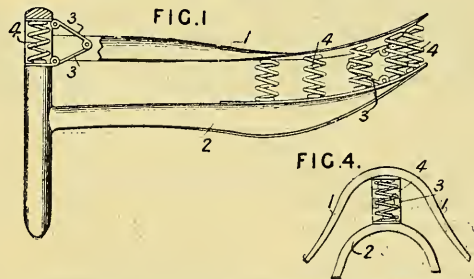
coiled round, as shown. The threading of the straps through the hair may be assisted by a bodkin.

7794. Parkes, T. W. April 3



Collars, neck, hames for. Each hame is formed from a length of bar rolled to the section shown in Fig. 2. The plate A bears against the body of the collar, the rib B fits against one side of the forewale, and the edge *f* fits snugly beneath it. The ends of the plate A and rib B are trimmed down as shown, and the bar is bent to the usual hame shape. The eye E may be formed by welding on a tubular piece and afterwards forging and punching it, or by simply bending up the end, as shown in Fig. 9. The hame hook or its supporting staple may be fixed by rivets through the holes F. Slots may be formed at *e* for connecting-straps.

8649. Simpson, W. S. April 14.

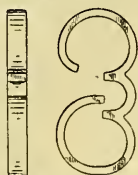


Saddles.—In order to reduce concussion, the tree consists of a double framework 1, 2 connected together by springs 4, or by springs and hinged links 3, to prevent side play. The girth is attached to the part 2 and the stirrups to the part 1.

8777. Cope, J.
April 15.

Fastening.—The hook for fastening a curb chain to a bit has the form shown.

FIG.1. FIG.2.



these recesses fit the arms of the fork *e* and member *c* of the hinge, a steadying effect being thus obtained.

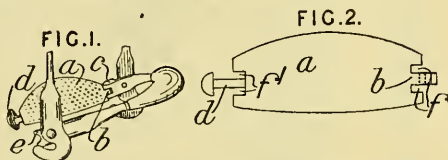
9109. Dyer, H., [Rieger, E.]. April 19.

Spurs and spur-carriers.—Relates to a screw socket for use with screws which have to be frequently screwed in and unscrewed from soft material such as leather &c., and is stated to be applicable for fixing spurs. The socket is preferably conical and has an internal thread and external wings or ribs *f* to prevent it from rotating when once driven into the leather &c. The socket may be driven home by means of a spike, the point of which rests on the bottom of the socket; the shank of the spike does not touch the screw-thread, but its head may rest on the top of the socket.

FIG.1.



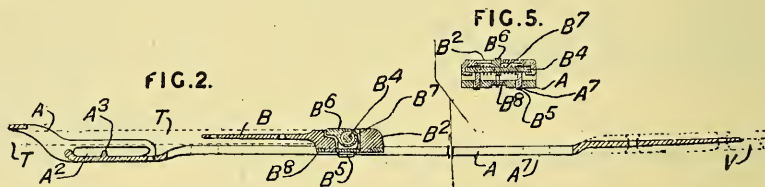
8778. Cope, J. April 15.



Stirrups.—Relates to improvements in the safety stirrup described in Specification No. 8940, A.D. 1885. The tread *a* has recesses *f, f'* on each side of the hinge member *b* and guide-pin *d*. Into

9609. Craig, A. M. April 25.

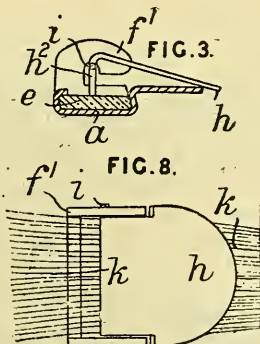
Fastening traces. The trace *T* is riveted to the tang *B* of a block *B²*, and the hame tug *V* is riveted to a metal strap *A* provided with a loop *A¹* for the trace and loops *A²* for the backband, which is kept in place by a pin *A³* entering one of the holes in the back band. The block *B²* has a dovetailed strip *B³* for sliding in a corresponding slot in the strap *A* and is fixed thereto by spring catches *B⁵*, which enter holes *A⁷* at the sides of the central



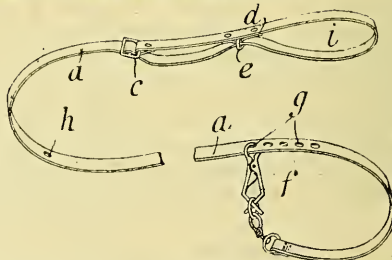
slot in the strap *A*. The catches are carried by a rock-shaft *B⁴* provided with a thumb-piece *B⁶*, which is lifted for disengaging the catches. A spring *B⁷* normally holds the catches in engagement.

10,420. Chasemore, A. E. May 6.

Manes, devices for arranging.—The manes of horses &c. are trained or laid by using a number of heavy or weighted clips, each of which is attached to a lock of hair. The preferred form of clip consists of a base-plate bent at *a* to hold a pad *e* of leather &c. and provided with side lugs *f¹* slotted to receive the pivot pins *i* of the L-shaped plate *h, h²*. The lock of hair *k* is laid upon the base-plate, and the plate *h* is then slipped into place and pressed down.



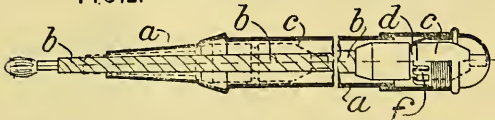
11,063. Dengler, G. May 14.



Dog couples, leashes, leaders, and the like.—The strap *a* carries at one end a buckle *c*, and near to it a loop *e* fixed by a slip *d*. The other end carries a hook *f* adapted to engage with the holes *g, h*. The loop *i* is passed round a dog's neck, and the other end of the strap may be made into a loop, as shown, to go round a second dog's neck, or, by placing the hook in the hole *h*, for going round the keeper's waist.

12,763. Bode, H. June 4.

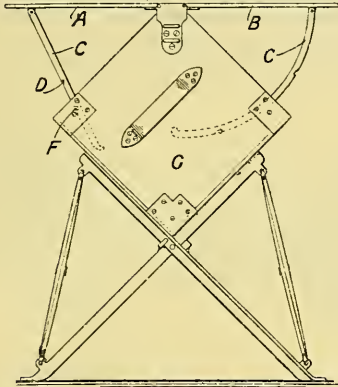
FIG. 2.



Whips.—The whip is for the use of cyclists to keep off dogs. The thong *b* of rubber &c. slides in the tubular handle *a*, and is kept in its closed position by a head *c* with an annular groove *d* for spring catches *f*. When the handle is swung violently, the thong is jerked out ready for use.

13,008. Green, W. W. W. June 7.

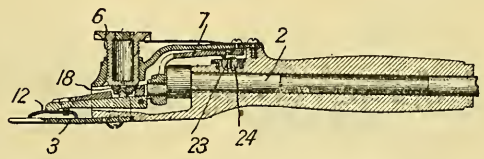
FIG. 1.



Brackets and stands for.—Relates to a box or basket suitable for picnic, stable, or other purposes, which can also be used as a table &c. The box is supported on a folding stand as shown in Fig. 1, and is provided with a hinged back *B*, which may be in two or more parts, as well as with a hinged lid *A*, so that both may be raised into a horizontal position for use as a table and be supported in this position by means of notched bars *C* engaging with pins *F* on the inner sides of the ends *G*. When the back *B* is closed, it is automatically locked by reason of a notch engaging with a pin *F*, but the lid *A* is secured in the ordinary manner. The bar *C* attached to the back *B* may pass through an aperture in the closed lid *A* and be secured by a padlock &c. This arrangement is particularly applicable when the receptacle is made of wicker-work and used as a picnic basket; in this case the stand is made reversible, and so that it will support the receptacle at a different height when inverted. By this means the table may be used in one position as a standing-table, and in the other as one at which persons may be seated. The ends of the receptacle are provided with sockets capable of holding various devices such as a lamp bracket, a hooked stem or bracket on which bridles &c. may be hung, or a cloth water-basin. The closed box may be used for supporting a saddle &c., and the interior thereof may be divided into compartments as desired.

13,213. Stewart, J. K. June 10.

FIG. 1.



Horse clippers.—Relates to that class of clipper in which there is a fixed comb or cutter *3*, a vibrating cutter *12*, and an oscillating arm *7*, for operating the latter, deriving power from a shaft *2* extending through the handle. The pressure-regulating screw *6* is hollow to contain oil, which passes to the saddle *18*. The pivot *23* of the arm *7* is mounted in a ball *24*.

13,265. Mackie, W. June 11.

FIG. 2.

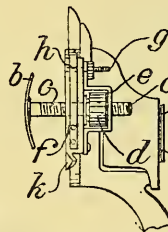
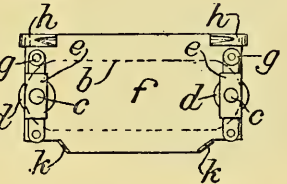


FIG. 4.



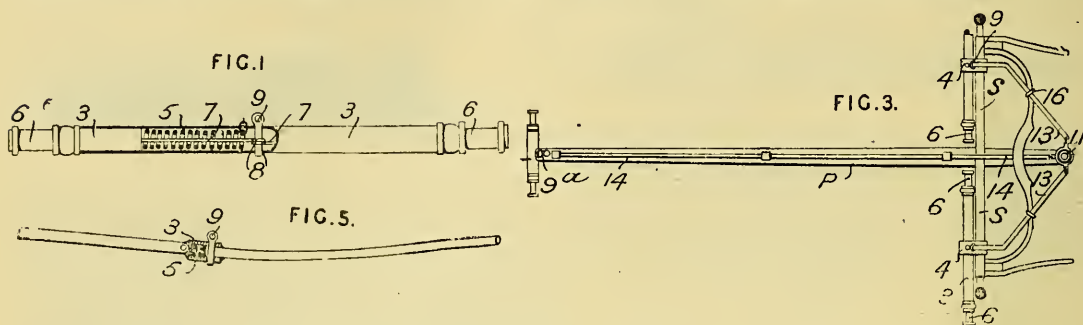
Horse clippers and the like.—Relates to a device for attachment to hair clippers to regulate the length of hair left uncut. The clipper is supported by an adjustable shield *b*, which rests on the skin. This shield, which may have prongs or teeth on its front edge, is adjusted by two nuts *d*, which engage with screws *c* fixed to the shield. The nuts are carried in loops or brackets *e* on a plate *f*, which is fixed beneath the comb plate of the clipper by means of its bent-over side edges, screws *g*, spring clips *h*, and lugs *k*.

13,544. Szabady, V. June 14.

Fastening.—Relates to means for instantaneously releasing horses from vehicles, and is shown in plan in Fig. 3, applied to a two-horse carriage. On each side of the pole *P*, a cylindrical tube *3* is secured to the splinter-bar *S* by a clip *4*, and in the ends of the tubes slide the trace-holders *6*. The helical springs *5*, Fig. 1, press the trace-holders outwards, but their displacement is normally prevented by extensions *7* of which the eyeletted ends *8* receive pins *9* passed transversely through the tubes and clips. The pins are connected, by levers *13* pivoted at *16* on the fore-carriage, to a vertical bar *11* which can be slid by the driver to withdraw the pins and release the trace-holders. The connections at the forward end of the pole are simultaneously released

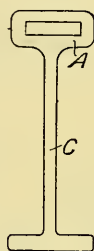
by means of the bar 11, belt 14, and pins 9^a. In the application to a one-horse carriage, shown in

Fig. 5, the shafts are normally held in sockets 3 against the action of springs 5 by pins 9.

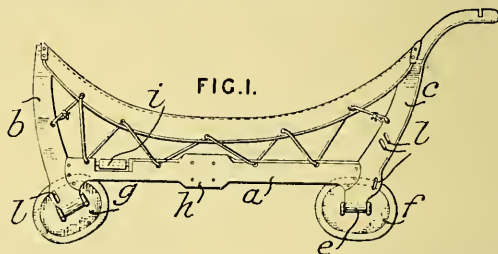


13,591. Maxwell, W. G. June 16.

Stirrups.—Instead of the eye A lying in the plane of the bow C as usual, it is inclined at an angle thereto. The Figure shows the eye arranged at a right-angle. The eye may be made in a piece attached to the bow by a bolt, swivel, or similar device.



&c. These discs are hinged as shown to extensions of the pommel and cantle plates b, c, which are rigidly connected together by side bars a. Slots are formed at l for attaching packages; rollers are

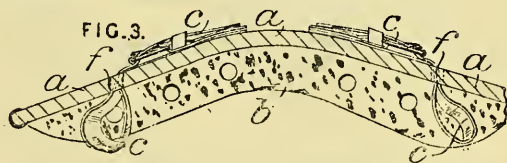


13,777. Erbes, F. June 17.

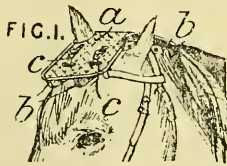
Saddles.—The saddle bears on the horse's back by means of four padded discs f, g of aluminium

placed at i for the stirrup leathers; and the bars a are widened at h for the attachment of the girth &c.

14,048. Walther, F. C. June 20.

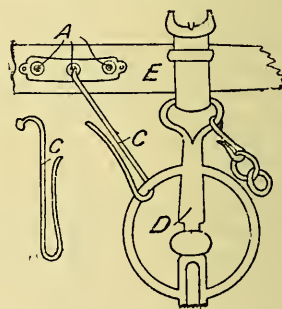


Sun and weather screens.
—A screen for preventing sunstroke and heat-stroke consists of a plate a carrying perforated ribs, rods, or stays b, and attached to the bridle by buckled straps c passing through holes f. The air has free passage between the ribs. The parts a, b are made of absorbent material such as felt, cork, &c., and the screen is dipped in cold water before it is attached. The screen may be coloured to match the horse.



14,235. Atterby, J. S. June 24.

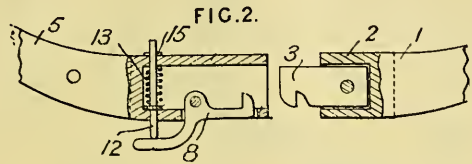
Bridles.—The bit D is adjustably connected to the noseband E by a hook C or other connection, which may fit into eyeleted holes A in the noseband. By this means pressure on the bit, when the reins are tightened, is communicated to the noseband, so as to prevent animals from running away.



15,018. Tischendorf, F. E. July 5.

Fastening.—Relates to a snap fastening for divided horse-collars. The part 1 carries the fixed hook 3, and the part 5 carries the pivoted hook 8,

the tail of which is normally pressed down by a sliding rod 12 urged down by a spring 13 and

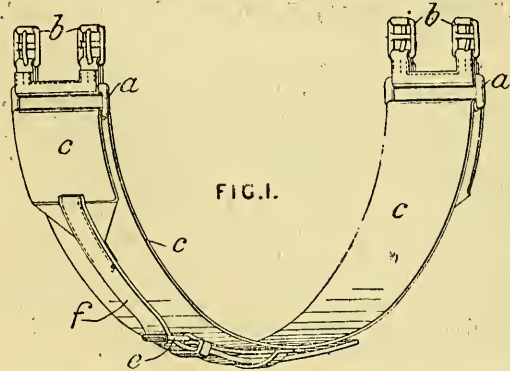


provided with a pin 15 for raising the rod 12 to release the fastening.

15,098. **McSwiney, W. D.** July 7.

Saddles, girths for. With the object of adapting the girths to animals of very different sizes, it

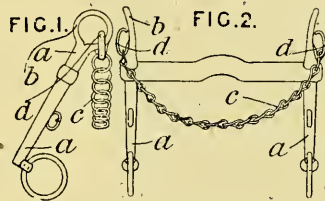
consists of a band *c* the ends of which are passed through the loops *a* and fastened by straps *f* and



buckles *e* near the centre of the girth. The loops *a* carry buckles *b* for the usual tabs &c.

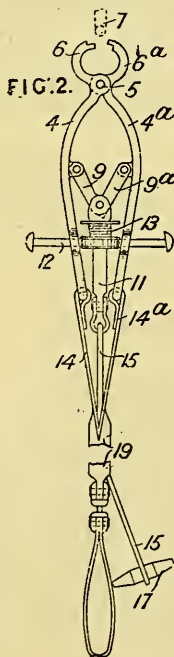
15,382. **Crawdson, A.** July 10.

Bits.—Relates to an improvement in the means employed for fastening the curb chain to the top rings of a bit. Hooks *d* and the top rings *b* are made together in one piece with the side bars *a*, the hooks *d* being fixed at an angle so that the curb chain *c* will have a direct pull, and having their ends turned well over within the rings *b*.

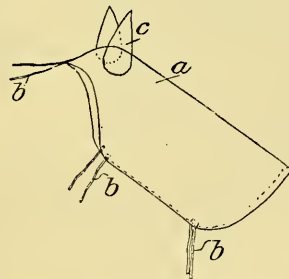


15,558. **Melson, A. D.,** [trading as Hiatt & Co.]. July 12.

Dog leashes and the like.
—A leash for slipping dogs and for like purposes engages the ring &c. 7 of the dog collar &c. by means of the jaws 6, 6^a on the levers 4, 4^a pivoted together at 5. These levers are normally pressed apart to close the jaws by the toggles 9, 9^a forced into a straight line by the spring 13, the rear end of which bears on a cross-bar 12 sliding freely through holes in the levers. The toggles are pulled down, to release the dog, by a rod 11 fastened to a cord 15, which passes through the leash proper 19 and carries a handle 17. The leash proper is connected to the levers by the arms 14, 14^a.



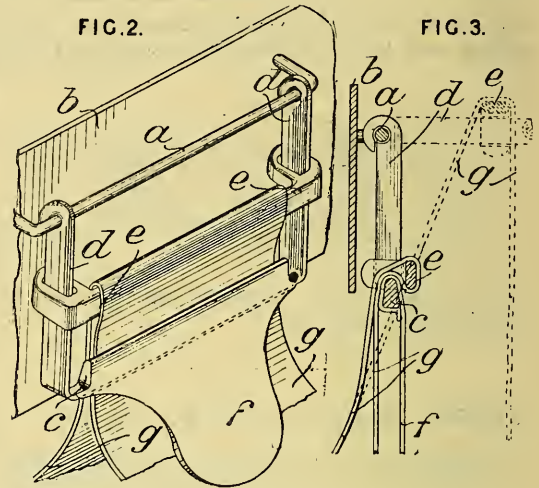
15,608. **Biucchi, B.** July 12.



Sun and weather screens.—A sun or weather screen *a* for the neck and head of a horse or other animal is made of pliable material, such as leather, for protection against rain, snow, &c., and of any textile fabric or straw plaiting for protection against the sun. The device is suitably attached by straps or the like *b*, and is worn either under or over the bridle. Suitable coverings *c* may be provided for the ears, and the portion of the screen for the head may be detachable from that for the neck. The Provisional Specification states that the sun screen is provided with a conveniently-constructed frame in order to allow a free passage of air between the bonnet and the skin of the animal.

15,866. Jones, C. D. M., [Jones, R. G.].
July 16.

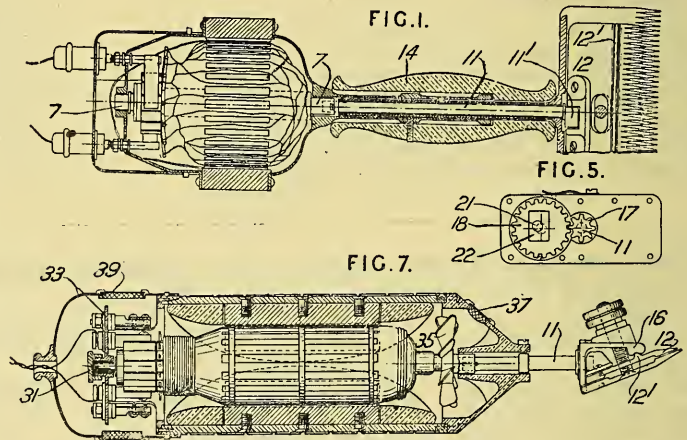
Fastening girths &c. Relates to a slide fastening for flexible bands or straps such as saddle girths, waist-belts, and braces. The Figures show the fastening applied to a girth. The girth *g* is looped over the bar *e*, which slides on the spring arms *d*, which tend to spring apart. The arms *d* are pivoted to a rod *a* attached to a plate *b* fixed to the saddle-tree. The bars *d* are united by a wedge-shaped bar *c*, to which is sewn a leather flap *f*. A grip is effected when the parts occupy the position shown in Fig. 3. By pulling up the flap *f*, and thus raising the bar *d* &c. to the position shown in dotted lines, the grip is released.



15,875. Chat, E. July 16.

Horse clippers and the like.—

The clipper proper is combined with an electric motor which drives the shaft 11. In the form shown in Fig. 1, the motor shaft 7 is directly connected to the clipper shaft 11 enclosed in a handle 14. The shaft 11 is either provided with a cam 11' for reciprocating the cutter 12 or carries a pinion 17, Fig. 5, gearing with the spur-wheel 18 provided with an eccentric pin 21 for reciprocating the block 22. This block slides in a transverse slot in a bar which is connected to the cutter and is reciprocated by the block. The cutter has a longitudinal rib 12', Figs. 1 and 7, which slides in a groove in the part 16. In the modification shown in Fig. 7, the motor has the form shown, and its shaft 31 carries a fan 35 which draws air through the opening 39 in the casing 33,

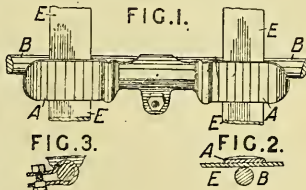


and forces it through the opening 37 on to the clipper. By this means the motor is kept cool and the hair is blown away from the clipper. The openings 39, 37 are covered with wire gauze.

16,536. Stallard, W. E. July 25.

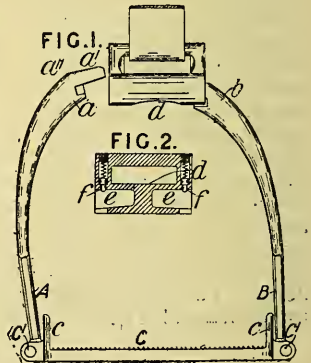
Rein - holders.—

The reins *E* are clipped between the dashboard rod *B* and the ends of a spring *A*, which is itself secured to the rod by a central screw clip. The ends of the spring may be curved to lie over the rod, and the ends of the central clip may be turned over solid rods through which the fastening-screw is passed.



16,557. Briggs, F. J. July 25.

Stirrups.— In a stirrup from which the foot of the rider is released in case of his being thrown, the side legs *A*, *B*, hinged at *C* to the foot-plate *C*, are provided with heads or enlargements *a*, *b*, passing into recesses *e* in the

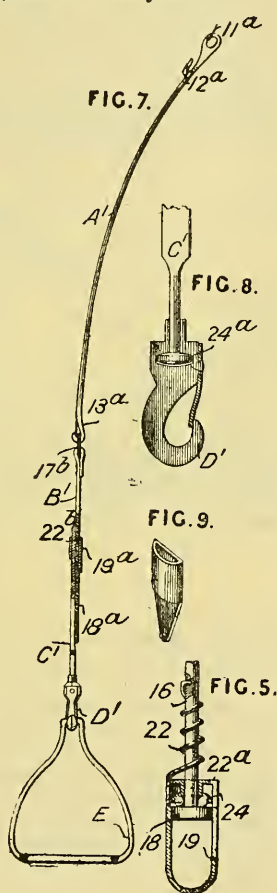


ends of the eyelet-piece *d*. In closing the stirrup iron, spring-pressed plungers *f* enter grooves *a*¹, and finally seat themselves in small holes *a*¹¹. The foot-plate may be provided with guards *c*, or the hinged legs may have rectangular arms extending inwardly and seated in or on the foot-plate. In a modification, a two-armed flat spring secured to the eyelet-piece *d* is provided with small projections entering recesses on the undersides of the heads *a*, *b*, or the springs may be secured to the heads and the recesses be made in the eyelet-piece.

16,828. Wellman, L. P. July 29.

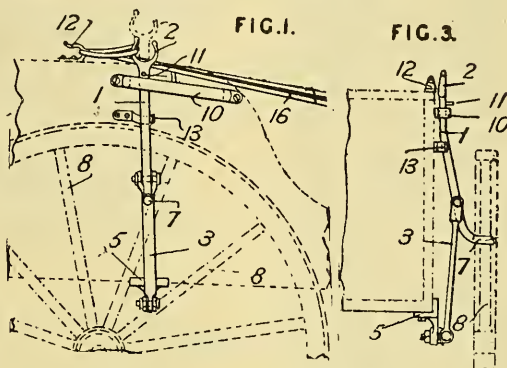
Fastening; saddles, stirrup straps for. The strap is of metal &c. and consists of a bent upper section *A*¹, an intermediate section *B*¹ provided with a number of holes *18*^a, and an adjustable lower section *C*¹ connected to the section *B*¹ by a number of pins *22*^b, which are kept in engagement with the holes *18*^a by a loop or sheath *19*^a with a pin for entering one of the holes *18*^a. Sections *A*¹ and *B*¹ are connected by a loop *17*^b and a snap-hook *13*^a. The section *A*¹ has an eye *11*^a for the saddle-bar and a hook *12*^a for the attachment of the eye *17*^b of the section *B*¹, when it is desired to shorten the stirrup straps. Section *C*¹ is connected to the stirrup *E* by a swivel snap-hook *D*¹, Figs. 7 and 8.

The hook is made in two halves, with recesses for the head *24*^a, the halves being twisted together after the head has been introduced. Fig. 5 shows a shackle or swivel for holding the stirrup at any angle to the sides of a horse to facilitate the insertion of the rider's foot, while allowing the stirrup to be readily turned when the foot is in position. The rod *16* forming the lower section of the stirrup strap is unable to turn axially. The stirrup is supported by a loop *19*, bent inwards to engage with the head *18* of the rod *16*. Antifriction balls *24* may be introduced as



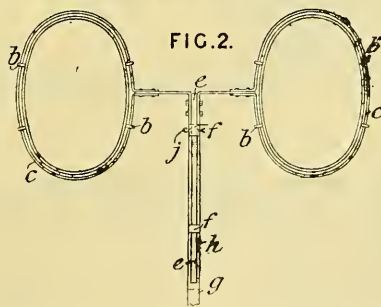
shown. A coiled spring *22* is fixed at one end to the rod *16*, and at the other end engages with one of a series of slots *22*^a.

16,845. Matthews, F. July 29.



Controlling restive animals.—Relates to a device attached to a road-vehicle for preventing a horse from backing or moving off if left unattended. The reins *16* are passed round the hook *12*, and attached to the forked end *2* of a lever *1*, which is formed with a bent arm *7*, and is pivoted to a lever *3*. This lever is hinged to a pivot on a fixed bracket *5*. Before leaving the vehicle, the occupant loops the reins as shown, and then pushes down the lever *1*, which causes the arm *7* to project between the wheel spokes *8*. If the horse moves forwards slightly, the lever *1* is turned so as to tighten the reins. A pin *11* and loop *10* limit the movement of the lever *1*. The wheel is locked, but the reins are not tightened if the animal backs. In a modification, the lever *1*, formed with the arm *7*, is pivoted to the bracket *5*, and springs outwards to lock the wheel when released from the clip *13*.

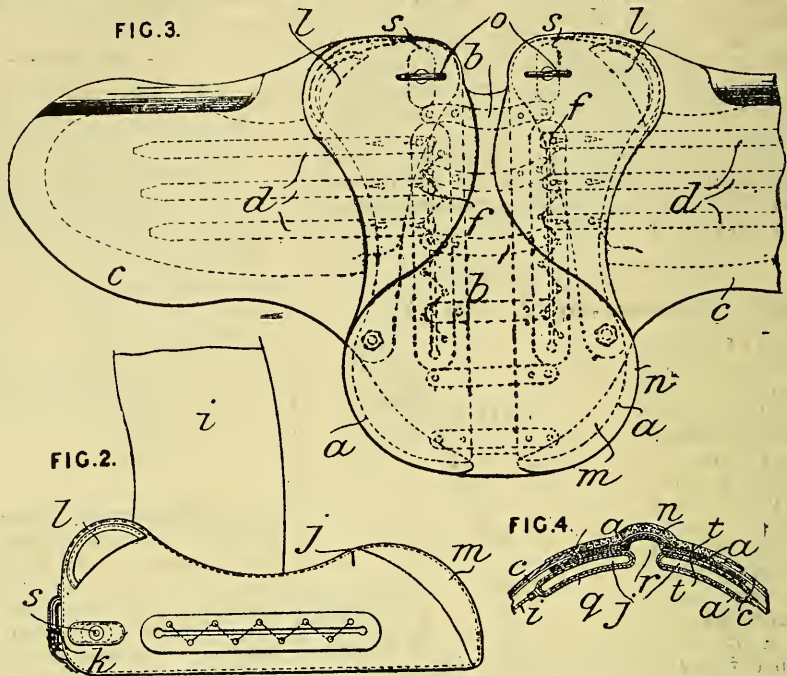
17,188. Delahaye, F. P. Aug. 5.



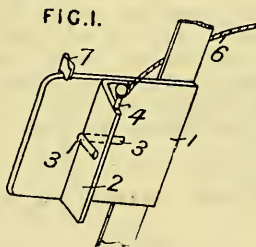
Nosebags for horses or other animals are supported by spring hooks or the like *b* from frames *c*, which are fixed to a bar *e* detachably connected to the pole *g* of the vehicle by staples *f*, which are preferably riveted to a plate *h* fixed to the pole. A pin *j* secures the bar *e* in the staples. For a single-horse vehicle, the frame *c* may be arranged to be attached to one or both shafts.

17,200. Bleses, J. P., and Jansen, J. Aug. 5.

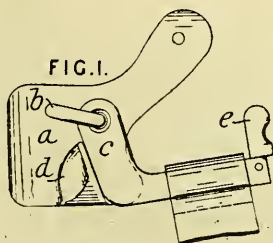
Saddles.—A riding-saddle, specially suitable for breaking-in horses, has a tree consisting of pen-steel plates *a* connected by cross-strips *b*, all enclosed in a suitable material *t*, such as leather. Attached to these plates are flaps *c*, the straps *d* connected by studs *f*, and inflated rubber pads *j* encased in a suitable material *q*, such as canvas, to which the underflaps *i* are secured. The pads are inflated by valves *k*, and are attached to the plates *a* by pockets *l*, *m* and screws *o* engaging with flat screwed bushes *s*. Above the plates is fixed the seat *n*. A space is left at *r* for the horse's spine.

**17,294. Schmidt, E. F.** Aug. 6.

Stopping runaway animals; bridles.—The horse is blind-folded by a soft leather &c. flap 2 attached to the blinker 1. The flap is normally held flat against the blinker by a pin 4 engaging with a spring clip 7. When the pin is pulled out from the clip by a cord 6, the blade spring 3 turns the flap into the operative position shown.

**17,420. Nind, T. W., Hampson, W., Scott, J., Sanders, A., and Wood, F. Y.** Dec. 3.

Stirrup straps, suspending, safety saddle-bars for. In a safety saddle-bar, the stirrup leather is looped over an elbow-piece *c* provided with an ordinary thumb-bit *e*, and the piece *c* is connected to the

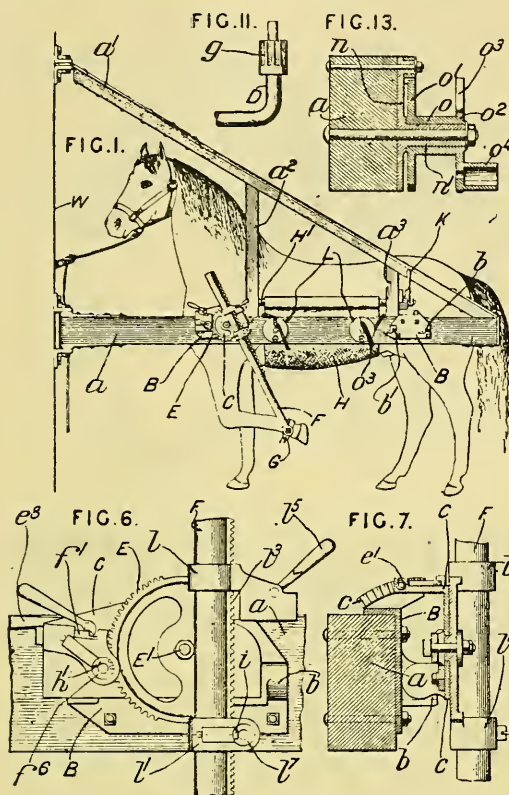


base-plate *a* by a staple *b*, and rests against an abutment *d* formed on or fixed to the plate *a*. The piece *c* is thus capable of swinging outwards from the plate *a*.

17,925. Boulton, A. J., [Barcus, G. N., and Rowley, A. B.] Aug. 14.

Animals, stocks for holding.—An apparatus for holding horses during shoeing consists of two frames *a*, *a'*, *a''*, *a'''* hinged to a wall *W* and provided with winches *L* for holding breast and breeching ropes and with adjustable devices for supporting the leg being shod. There may also be rollers *H*¹ for a broad girth *H*, the rollers being tightened by a lever *K* and pawl and ratchet mechanism. The winch consists of a reel *O*, *O'*, *O''*, Fig. 13, turning on the boss *n'* of a plate *n* bolted to the frame *a*. The plate *n* carries a pawl for engaging with ratchet teeth on the flange *O'*. A notch is formed at *O''* for the end of the rope, and a socket *O''* is provided for turning the winch by means of the key or handle *D*, Fig. 11. The animal's leg is attached by an ankle piece *G* to a rack *F*, which slides in eyes *l*, *l'* on a toothed sector *E*. The rack is operated by the key *D*, Fig. 11, which carries a toothed drum *g* engaging with the rack when it is inserted in the socket *l'*. A spring bolt *i* keeps the key in operative position. The rack is locked by a toothed bolt *l''* operated

by a lever h^2 . The sector E is pivoted at E^1 to a plate C, and can be turned so as to swing the rack into different positions. The sector is turned by the key D inserted in the socket f^6 . The key is



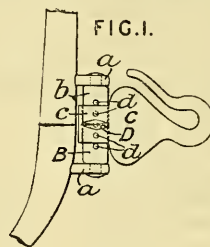
kept in place and the sector is locked by spring bolts h^1 , f^1 corresponding to the bolts i^1 , i^2 above-mentioned. The plate C carries trunnions which engage with the bearings b , b^1 on the plate B bolted to the frame a . The plate C may be swung on these trunnions, and then locked by a sliding bolt e^1 engaging with the toothed sector c and operated by the lever e^2 . In shoeing one leg after the other, the plate C with the rack and adjusting-devices is removed from one plate B to another similar plate, of which four are provided.

18,280. Bower, J. Aug. 20. *Drawings to Specification.*

Backbands.—In an implement for thinning turnip and similar crops, drawn by horse traction, an adjusting-screw is employed in connection with the backband of the harness, so that the level of the implement may be adjusted for different sized horses.

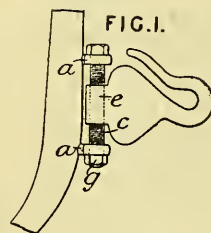
18,604. Parkes & Gnosill, and Green, H. Aug. 25.

Collars, neck.—To allow its adjustment on the hame, the draught plate or hook C has a boss or eye c , which can slide upon a flat portion b of a bolt B swivelled within the cheeks a . A thumb-screw D clamps the hook C in any desired position.

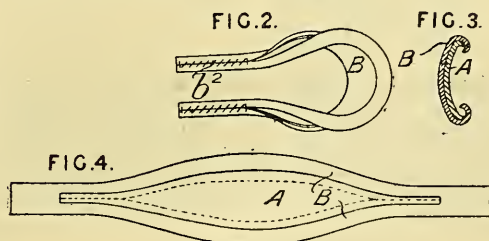


18,605. Ridsdale, G. R. Aug. 25.

Collars, neck.—The adjustment of the draught hook on the hame is effected by a headed screwed pin c , carried by the cheeks a and passing through the barrel e of the hook. To raise or lower the hook, the nut g is slackened, and the pin c turned in the required direction, after which the nut is again tightened. In a modified form, the barrel of the hook has a plain hole, and is adjusted by nuts screwed upon the pin, one above and another below the barrel. In order that the pin may turn in the cheeks, the diameter of the lower portion is reduced to form a shoulder, which prevents the nut g from being tightened up against the lower cheek. The pin may be prevented from turning while in use, by squaring its upper end to fit into a square hole in the upper cheek.



18,748. Allison, C. A., [Schneider, G., Hoff, C., and Hofmann, F.]. Aug. 26.



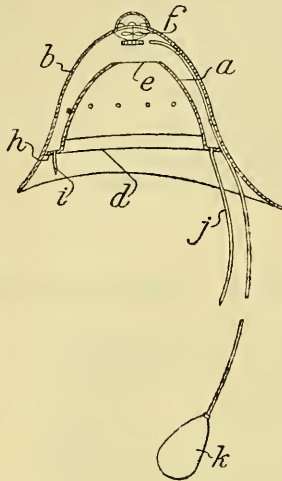
Breeching, cruppers for. The crupper is made from two pieces of leather A, B, which are sewn &c. together, turned over at the edges, and then bent to crupper form, as shown in Figs. 2 and 3. The meeting-edges of the piece B may be stitched

together at b^2 . The leather is damped before bending, and is pressed by a heated roller over a suitable form.

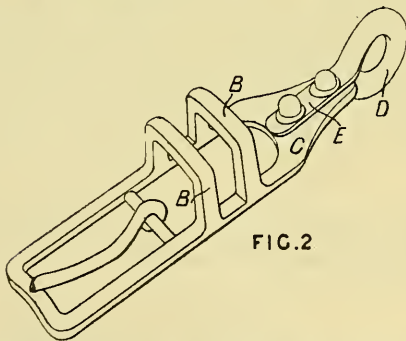
19,015. Meerza, Prince S. H. Aug. 29.

Sun and weather screens.—Relates to the ventilation of hats, helmets, and other head coverings for man or beast. The hat is made with an inner crown a united to the outer b by a ring d and having an opening e at the top. The crown a may be reduced to the size of a mere band. In the upper part of the crown b is fitted a fan f operated by an accumulator carried in the pocket, or by a pneumatic ball k or by other means.

The air drawn in at the top of the hat by the fan is forced out through openings h or tubes i, j .



19,042. Trifitt, J. C. Aug. 29.

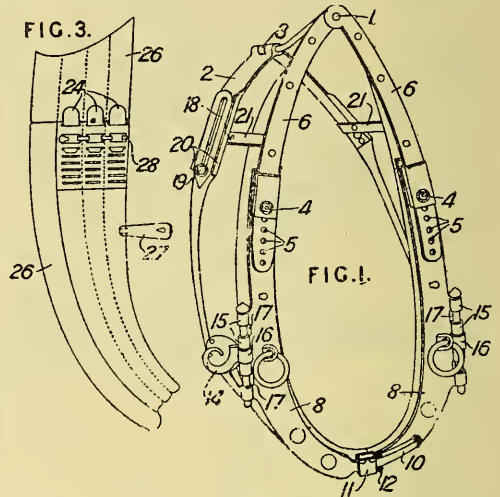


Fastening.—Harness buckles are formed with two loops B , and, when used as hame-tug buckles, are further provided with an extension C , to which an eye or ring D can be attached by means of lugs E and rivets, bolts, &c. The extension C may be grooved on one or both sides to receive the lugs E .

19,077. Schmidt, A., and Elsner, K. Aug. 30.

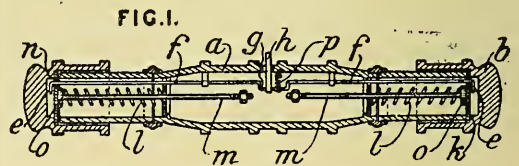
Collars, neck.—The frame of an adjustable collar consists of the bars $2, 6, 8$ united by the

cross-bars 21 . The bars 6 are hinged together at 1 , and the bars 8 are connected by the projection 10 fitting into the socket 11 and by the wedge 12 entering a slot. The bars $6, 8$ are adjustably



connected by screws 4 passing through sockets on the bars 8 and engaging with holes 5 in the bars 6 . The bars 2 are hinged at 3 , and the upper and lower sections are connected by screws 19 passing through slots 18 in the lower section and engaging with the upper section flanged at 20 . The bars $2, 8$ are riveted together. The bars 8 are provided with eyes 15 , between any adjacent pair of which the eye 16 of the hame hook &c. 14 is secured by the pin 17 . The body of the collar is in two parts 26 connected together by straps 24 , which are secured by pins 28 . The body is connected to the frame by screwing and by the straps 27 .

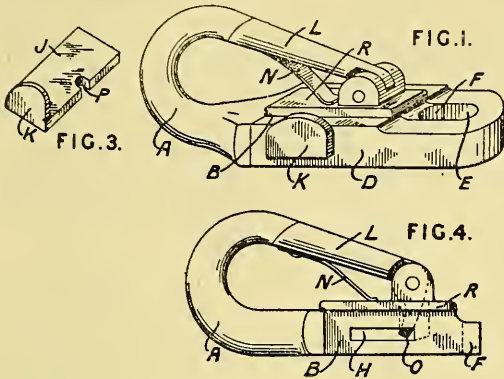
19,467. Fischer, J. Sept. 5.



Fastening traces. Relates to means for releasing runaway horses. The ends of the hollow splinter-bar a are closed by detachable caps b to which the traces are secured, and within the caps are fitted plates k having slots n large enough to allow the bent ends e of a rod f to be passed through. After the ends have been passed through, the caps are held in position by rotating the rod slightly by means of the cranked part g and the handle h , which is controlled by the driver. To release the horse, the rod is rotated until its bent ends come opposite the slots, when the caps with the attached traces are freed from the splinter-bar by discs o on

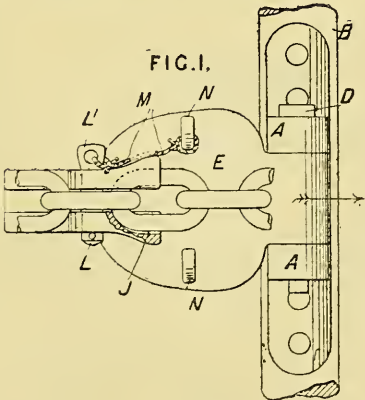
sliding rods *m*, which are pressed outwards by helical springs *l*. A spring *p* normally holds the rod *f* in the desired position.

19,536. Stimpson, J. Sept. 6.



Fastening.—Spring hooks for fastening harness, especially shaft tugs, are made in two parts A, D. The narrower part B of the hook A fits in the open end of the part D and is secured by the cottar J passing through slots H and having a head K to facilitate its removal. The end F of the hook part is suitably shaped to complete the ring E, Fig. 1. The pivoted lip L is held in position by the flat spring N. A projection O at the lower end of the lip L lies in a slot in the part B and engages a recess P in the cottar J. When the lip L is depressed, the projection O leaves the recess P, the cottar may be withdrawn, and the parts A, D may be separated. The hook part A may have a flange R to guide the parts A, D together. The hook may be easily unfastened, even when the chain is in tension, as when the horse has fallen.

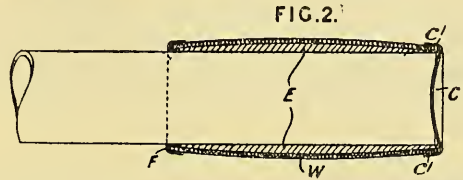
19,637. James, W. H. Sept. 8.



Collars, neck ; fastening.—The links of the trace chains are held in sockets formed on attachments

to the hames. The plate E, upon which the socket J is formed, is connected by a pin D to lugs A formed with or attached to the hame B, and the socket J is shaped so as to form a bed for the links of the trace chain. The chain is secured by a pin L, which is prevented from falling through by its enlarged end L', and is attached by a cord &c. M to an eyelet N.

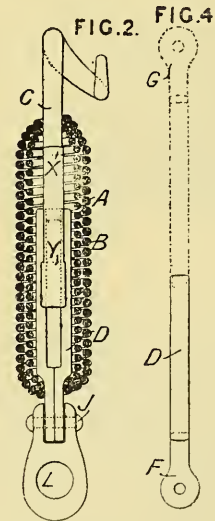
19,702. Wale, A. E. Sept. 9.



Whips.—Handles for whips are provided with a covering W of helical coils, such as described in Specification No. 20,826, A.D. 1891, [*Abridgment Class Fencing*], interwoven with one another. The covering may have an intermediate lining E of solid, flexible, or resilient material. A cap C, the edges *c*¹ of which press over the wire fabric W, may cover the outer end of the handle, and the edges at the other end may be bound by a ferrule F or a thread or wire.

19,763. Ruberg, H. Sept. 10.

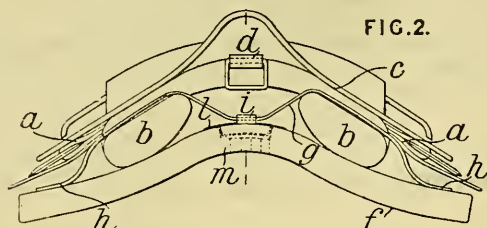
Fastening traces, spring attachments for. Relates to the method of making the sliding bars C, D enclosed by the usual helical springs A, B. The bar C is directly forged in the form shown with a slot extending from X to Y. The bar D, however, is first formed as a long straight bar with eyes F, G at each end. This bar is passed through the slot in the bar C, and is then bent double and riveted at J to an eye L.



20,137. Richards, J. W. Sept. 15.

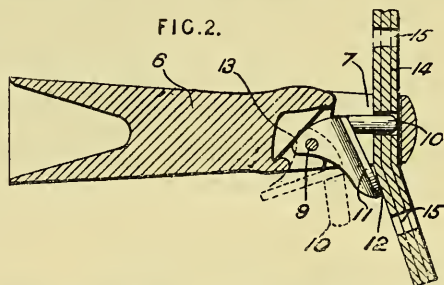
Saddles.—A numnah *f* is removably attached beneath a cart saddle or pad by means of straps *g* sewn down at *h* and connected to a loop at *i*. These straps pass over the side bars *b*, to the upper

sides of which the girth straps *a* are fixed. The centre of the numnah is cut away and covered with a sheet of leather *l*. Ventilating - holes *m*



are made in the leather and in other parts of the numnah. The front and crupper straps are secured to loops *d* on the tree.

20,370. Thompson, W. H. Feb. 25, [date applied for under Patents Act, A.D. 1901].

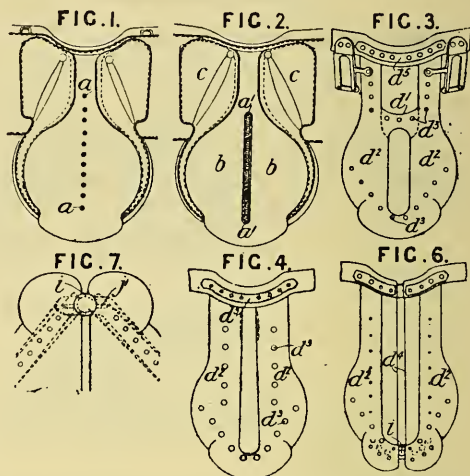


Fastening traces &c. Relates to means for fastening traces to whippetrees, and other harness straps to neck yokes &c. The whippetree &c. is fitted to a socket 6 provided with a loop 7 for the trace &c. 14. Within the loop is pivoted on the pin 9 the piece 11 provided with a pin 10 to enter one of the series of holes 15 and with a part 12 forming a clip for the strap, as shown. A spring 13 holds the piece 11 in position.

20,454. Boyce, J. W. Sept. 19.

Saddles.—Riding-saddles are made with one or more central openings *a*, Fig. 1, or *a'*, Fig. 2, extending for a part or the whole length of the saddle to provide for better ventilation, and with side bars jointed in such a manner as to adjust themselves automatically to the withers, shoulders, and backs of different horses. In making a saddle with openings such as are shown in Fig. 1, the tree is strained in the ordinary manner by tensioning to the cantle direct, and is then covered with prepared adhesive canvas, or with glued canvas, leather, or other material, the whole being secured and reinforced by sewing. A strip of leather or the like with trimmed edges may then be glued or otherwise secured to the middle of the saddle where the holes are to be; or this strip may be applied to the underside of

the canvas or its equivalent. The seat cotton is then applied in the ordinary way, except that it is sewn down its length on each side of the centre. Prior to drawing on the top, a strip of linen or



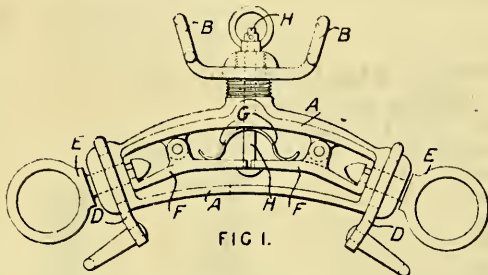
the like may be attached to the underpart of the seat leather. The under part of the webs may be covered with leather. When the whole has set, the holes *a* may be punched. A divided panel is used. The saddle shown in Fig. 2 may be made in a similar manner, and the opening may be reinforced by a metal loop or a piece of perforated metal or the like to which the edges of the webs and canvas, after a portion has been cut away, may be secured by sewing through holes in the metal. A rectangular loop of metal may be used, and the edges of the canvas folded round it, and secured to the bars of the tree afterwards. The tree may be formed with a bar strut *d'*, Fig. 3, and be strained from the pommels to the strut *d'* only. In this case, the metal loop is not used. The strut *d'* may be strengthened by metal plates secured to one or both sides by rivets *d''*, or it may be made of metal and formed with holes for attaching the webs. The bars *d''* are made wide, or are fitted with metal extensions so as to form a base for a seating of felt, cork, or the like. The ordinary blocked top *b*, *c*, *c*, Fig. 2, may be seamed round the opening *a'*, or be sewn round and edged up, or be bound round. The top may be seamless or seamed at the pommel and cantle only. When straining-webs are not used, the strap webs may be secured by passing them round narrow bars or through openings in broad bars. An opening extending the full length of the seat may be made in a saddle having a tree of the type shown in Fig. 4. The bars *a''* are made wide, and shaped to form the twist base. They may be covered wholly or partly with leather, felt, rubber, or the like, sewn or stuck on. Strengthening-plates may be secured to the bars and cantle by rivets *d''*. The bars may have metallic extensions *a''*, Fig. 6, secured by rivets. The bars may be detachably or permanently connected together at the cantle by metal plates and one or more hinge or rule

joints *i*, Fig. 7, or by a pin-and-slot connection *j*¹. The plate or plates at the cantle may also be connected by an overlapping plate and screws and nuts, the screws being passed upwards

through the cantle plates before the latter are fixed. The gullet plate or plates may be detachably connected to the pommel by screws and nuts or other means.

21,766. Brown, C. Oct. 29.

Dog leashes.—A dog slip for loosing two dogs for coursing is constructed with a frame *A*, a swivel *B* with loops for the attachment of straps, swivels *D* for the attachment of dog collars, and releasing-slides *E* held in place by catch-levers *F* and a spring *G*. The slides are released by pulling a bolt *H*, the head of which engages the ends of the levers *F*.

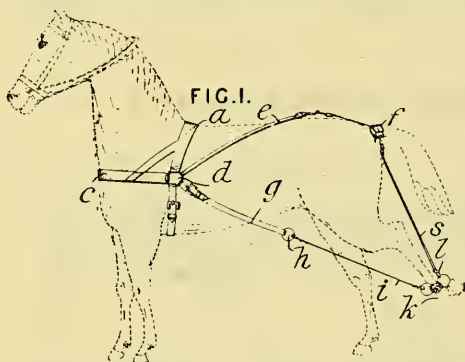


21,767. Grey, W. Oct. 7.

Tethering animals.—Pegs, stakes, or uprights are fixed in the ground, especially in turf, by making the entering end like a corkscrew and screwing them into place. Fig. 5 shows a peg *a* fixed in place by its screwed end *b*. The peg may have an eye *h* or a hook for the attachment of a wire *j*. The invention is applied to pegs for picketing horses &c.



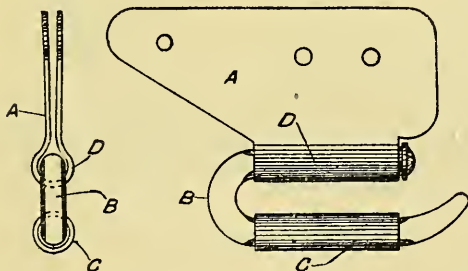
fixed to a girth *a*, a belt *e* connected to the tail belt *f*, and a strap *g* carrying a ring *h*, all attached to a ring *d*. The ring *h* carries a rope *i* secured to the fetter *k*, connected to which is a hook *l* having



21,800. Skerman, W. Oct. 7.

FIG. 3.

FIG. 1.



Stirrup straps, suspending, safety saddle-bars for. The stirrup strap is hung on the ferrule *C* of a piece *B*, the upper leg of which fits loosely in the tubular part *D* of the folded plate *A* riveted to the tree.

21,816. Specht, A. Oct. 7.

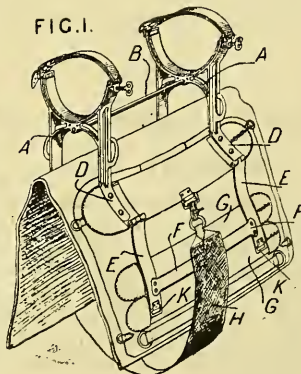
Animals, stocks and like appliances for holding.—Harness for holding animals while they are being shod comprises a woven or leather breastband *c*

holes through which pass the ropes *s* attached to the tail belt. Upon pulling the ropes *s*, on one or both sides, the leg of the horse is raised; the ends of the ropes may then be fastened or held as required.

22,340. Stewart, H. R. Newburgh. Oct. 14.

Saddles, pack. The arches *A* braced by the rod *B* and provided with fittings for carrying guns &c. have their legs *D* hinged to extensions *E*, which are united by the bar *F* and plates *G*. The girth *H* is attached to a plate

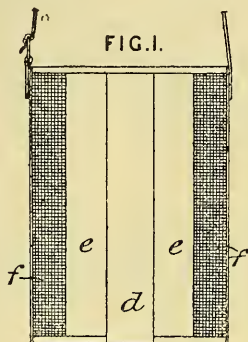
FIG. 1.



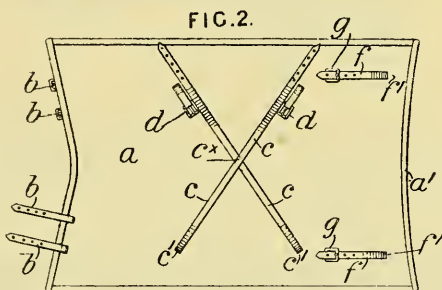
riveted to the legs D and presses on the bar F. The extensions E on opposite sides of the animal may be connected together by straps attached to the loops K. The saddle is thus pressed close to the sides of the animal, and is adapted to fit animals of different sizes.

22,456. Sagatz, B. Oct. 15.

Nosebags.—To facilitate the breathing of an animal having its mouth in a nose-bag, the material used is of such a mesh that air can freely pass through. The bands *d* are used to strengthen the sides, and, while the fabric at the parts *e* is close, that at the parts *f* is of wide mesh.



22,909. Perry, P. J. Oct. 21.

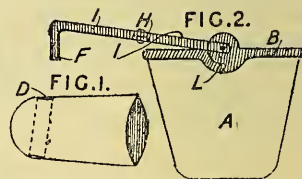


Clothing for animals.—Relates to rugs, cloths, or coverings for horses, cows, sheep, and other animals. The cloth consists of a canvas or other sheet *a*, waterproofed or otherwise, and preferably curved at *a'*, which is provided with a special arrangement of attaching-straps on its underside. The crossed straps *c*, fixed at *c'*, are for passing

beneath the animal's belly, and the straps *f*, fixed at *f'*, are for passing round the inside of the animal's hind legs. The straps *c* may be connected together at *c''*. All these straps, together with the ordinary neck straps *b*, are fastened by buckles &c. *b*, *d*, *g*.

23,397. Whall, C., Pfeiffer, J., and Tozer, W. Oct. 27.

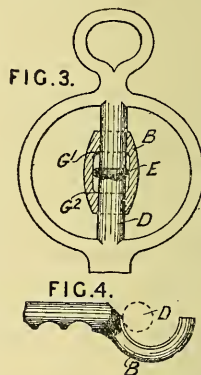
Nosebags.—A canvas nosebag or manger A, Fig. 2, is attached to a metal frame B, which may be folded up on hinges L so as to prevent the food from falling out. The arms



I are each made in two pieces jointed at H, and are bent over to form hooks F, which are inserted in the apertures D, Fig. 1, in metal caps on the ends of the shafts of the van, cart, or cab.

23,469. Noake, J. Oct. 28.

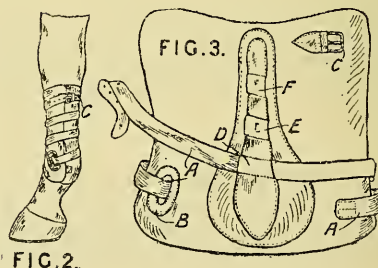
Bits.—In bits with vertically-sliding mouthpieces, the parts for limiting the vertical motion are enclosed in the ends of the mouthpieces in order to prevent the animal's lips from being pinched. The part D, Fig. 3, on which the bit slides is formed with a collar E or a stud which works in a recess in the butt B of the bit and limits its motion by engaging shoulders G¹, G².



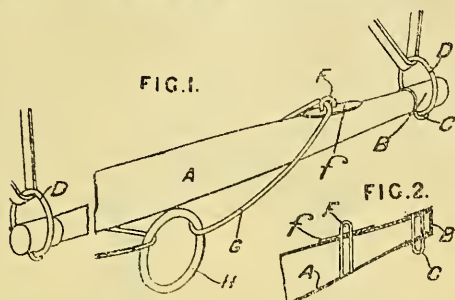
In a modification, the collar is formed on the inside of the butt, and the part D is recessed. The butt B of the bit is first made open as shown in Fig. 4, and is then closed round the part D by means of suitable tools.

23,498. Cooper, J., and Ruddock, J. W., [executors of Cooper, M.], **Cooper J., and Cooper, W.** Oct. 28.

Horse-boots.—An ankle boot for a polo or race-horse is secured to the animal's leg by a webbing or other strap A, attached to the bottom of the boot, passed through an eyelet hole B, and wound round the boot, being held in position by loops D, E, F and secured by a buckle C. The boot is hollowed to fit the leg; and, with the strap, may be made of felt, rugging, kersey, leather, caoutchouc, or the like.

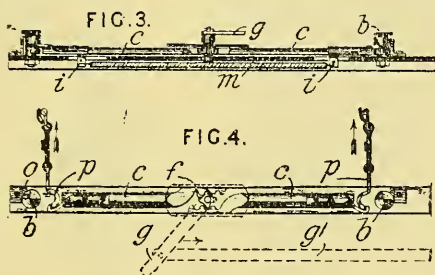


23,837. Hyde, G. T. Oct. 31.



Yokes, neck.—Neck yokes, whipple-trees, double-trees, and the like are made of sheet metal formed into a tube A. The ends are closed by caps B. Staples C, F for the rings D and loops G are riveted in the position shown. The tube is strengthened at the staple F by a plate f. The loops G are connected by a central ring H.

24,207. Vieser, W., and Reiser, F. Nov. 5.

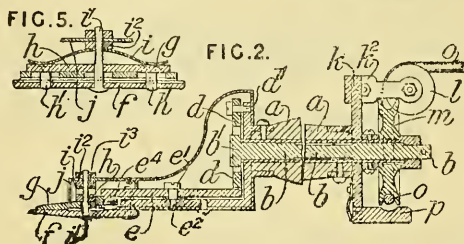


Runaway horses, releasing.—The traces are secured to the splinter-bar so as to be readily released should the horse shy or bolt. Sliding bars c, on the splinter-bar, have hooks at one end engaging the trace hooks p, while their other ends are toothed and gear with a pinion f, the toothed ends and the pinion being covered by a plate which forms a guide for the ends. Studs i on each bar c work in slots in the splinter-bar and are connected by a spiral spring m. To secure the traces, the pinion is turned by the lever g, causing the bars c to separate and force the trace hooks against the pins b and stops o. On releasing the lever, the spring m withdraws the trace hooks from the pins. In two-horse vehicles, the levers may be held in position by a bar g' to which one is pivoted, while the other is adjustably secured thereto by a split pin which is removed to release the traces. The pinion and toothed ends may be replaced by lever or other mechanism.

24,424. Vaughan, G. E., [Bentham, H.]. Nov. 7.

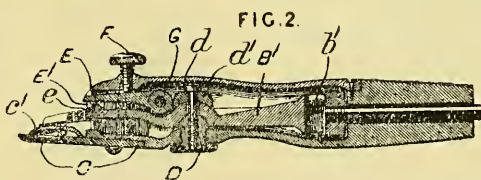
Horse clippers and the like.—The cutter g is pressed down upon the comb plate f by a plate h

provided with pins h', which pass through slots in the plate g and enter holes in the plate f. A spring i is pressed against the plate by a nut i' on the bolt i'. The front end of the casing j is



hinged to the rest of it, and is fixed by a nut i'. The cutter is reciprocated by a lever e, on the front end of which is an antifriction roller e' engaging with a notch in the cutter. The lever is oscillated on its pivot e' by a frame d rocked on its pivot d' by an eccentric b' on the shaft b, which passes through the handle a and carries a pulley m. This pulley is rotated by an endless cord o passing over other pulleys l carried by the frame k, k'. The lower part p of the frame is spring hinged, as shown.

24,784. Hawtree, A. Nov. 11.

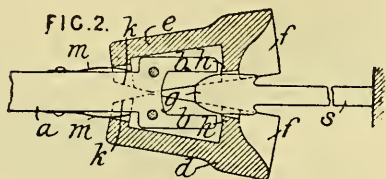


Horse clippers and the like.—The cutter c' of sheep clippers &c. is vibrated over the comb C by a lever B' provided with three prongs to bear on the cutter. The lever is pivoted on a bolt d and between the curved faces of the washer d' and stud D. The top of the stud may be concave to fix a convex part of the lever. The lever is operated by a roller b', which is carried by a crank-pin and runs in a groove in the lever. The tension is adjusted by a screw F, which bears on a plate E pivoted at G. The plate bears on a block E', which has a recess for oil on its upper face and, on its lower face, has a hemispherical recess for the corresponding projection e on the lever B'. Other self-adjusting bearings may be used for the lever.

25,144. Requard, W. Nov. 15.

Fastening.—A coupling for various parts of harness &c. comprises a forked guide b carried by a bar a on one part, and enclosed by two cheeks d, e pivoted to the guide. The rear ends of the cheeks have inclined surfaces h, and the front ends form a cup-like recess f having a central aperture, the inner edge of which has projections h adapted to engage behind a head g on a bar s attached to

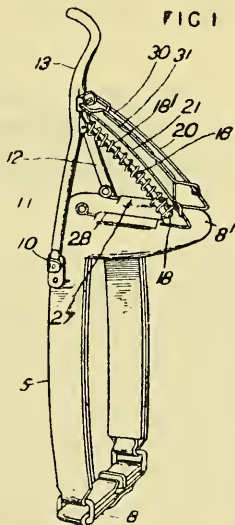
the other part. The head *g*, when introduced into the recess *f*, moves the cheeks apart and enters the forked guide *b*, where it is held by the cheeks, automatically closed by springs *m*. Each of the



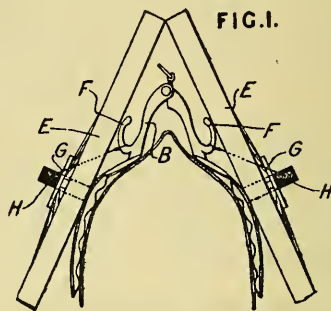
parts to be coupled may have a forked guide and cheeks; a loose double-headed bar carried by one of them then effects the coupling. To uncouple, the rear ends of the cheeks may be pressed by hand, or one of the cheeks may be provided with a recess having a pin or tongue on a pivot adapted to be rotated by a key or lever arms, so that, on operating the pivot, the pin moves the cheeks apart.

25,599. Troolen, C. N. Dec. 31, A.D. 1901, [date applied for under Patents Act, A.D. 1901].

Neck-pokes.—The neck-poke consists of the padded metal frame 5, 8', the arms of which are united by the strap 8. A Y-shaped lever 11, 12, 13 is pivoted at 10 to the frame, and is pivoted to a needle-bar 16, the extremity of which passes through a hole 18 in the part 8'. A spring 18' normally keeps the needle-bar retracted. A wire frame 20, 21, 30, 31, pivoted to the lever and sliding in the guides 27, 28, serves to protect the needle-bar. If the animal attempts to force its way through a fence &c., the lever is pushed back and the needle-bar gives the animal a smart prick.

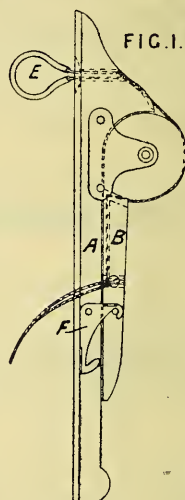


wheels, as shown. Additional steadying-straps may be secured to the wheels and saddle.



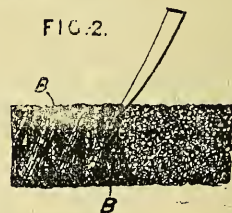
25,879. Rowse, W. G. Nov. 25.

Controlling restive animals.—In a twitch for horses and like animals, a circular-headed lever B is pivoted between brackets fixed to a handle A. The cord, passing through holes and grooves in the handle and lever, having been slackened by turning the lever, the upper lip or the ear of the animal is passed through the loop E, which is covered with rubber tubing, and the cord is tightened by closing the lever against the handle by means of a hook F, fixed to the handle, the twitch then being fastened to the headstall by the free end of the cord. The Provisional Specification states that the tension is controlled by a knot or an adjustable nut, clip, or the like on the cord, and that the instrument may be secured to the headstall by a strap.



26,539. Gordon, A. J. Dec. 2.

Pads; lining and padding; materials; saddles, numnahs for. Relates to porous and absorbent fabrics for forming clothing for animals and pads for harness &c., and to the pads themselves, the object being to produce an article which prevents chafing and sores &c. The fabric is

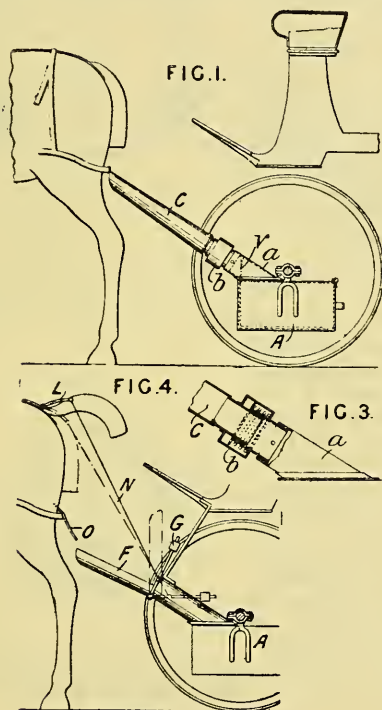


25,842. Stewart, H. R. Newburgh. Nov. 24.

Saddles, pack. A pack-saddle is provided with means for carrying the wheels E of gun carriages. The adjustable arches B carry hooks F or eyes, for eyes or hooks respectively, on the ends of ropes &c. G, which serve as slings. These slings carry plugs H for insertion in the hubs of the

formed by superposing several sheets of loose fibrous material, and then connecting them by interlooping by means of hooks or needles. The work is operated on from both sides, and the loops B are pulled in directions at right-angles to one another, as shown. Pads are formed from this material by simply cutting it to the shape required. The edges may, however, be stitched through, if desired. The outer surface may be covered with leather. Two or more such pads may enclose a sheet of metal or a pad of suitable porous material.

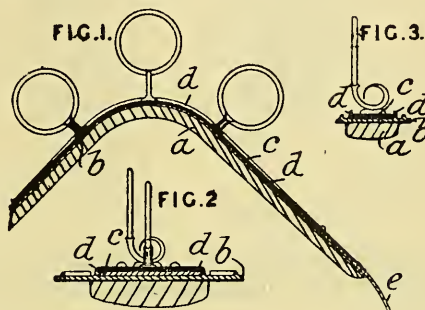
26,710. Calantarients, J. A. Dec. 4.



Droppings, devices for catching.—A receiver A carried by the vehicle is fitted with a removable lining and an inlet tube consisting of a member a, fixed to the receiver, within which is pivoted a spring telescopic member b. A waterproof sheet C forms a shoot from the breeching-strap to the inlet tube. In a modification shown in Fig. 4, the sheet C and the member b are dispensed with, and the shoot consists of a trough F hinged to the inlet tube and held normally clear of the horse by weights G or springs. This trough is brought into position to receive the dung, when the animal lifts its tail, by cords N attached to a hinged arm L, the curved end of which stands normally above the tail. An apron O fixed to the breeching-strap conducts the dung to the trough F. The inlet tube may be provided with a swinging flap v. The urine may also be conveyed, through a funnel and rubber tube or otherwise, to the receiver A or

a separate receiver. The Provisional Specification states that the receiver or its lid may be opened or caused to approach the animal when the tail is lifted, the lid forming an inclined plane from the horse to the receiver and being held normally closed by a weight or spring; also that the momentum of the falling dung may be utilized for closing or removing the lid; or an electric motor or other means, operated by the movements of the animal, may be employed to bring the receiver into position.

26,733. Speir, J. Dec. 4.

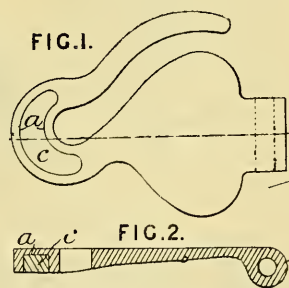


Saddles, harness. The pad cloth b is arranged above the pad a, and grooved or provided with ridges d between which the top part c rests. The girth straps e are preferably bolted between the pad cloth and the ends of the part c. Figs. 2 and 3 are sections near the ends and top respectively of the saddle.

26,910. Parkes, T. W. Dec. 6.

Collars, neck.—

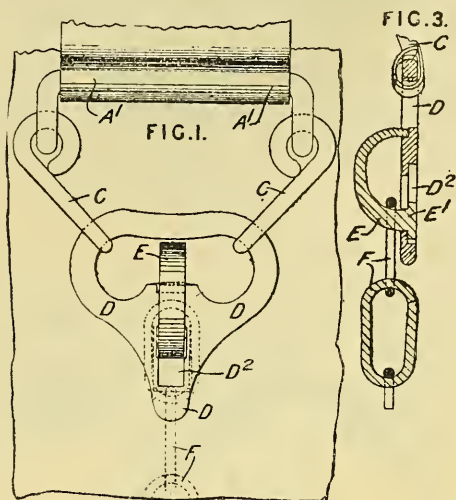
Hame hooks for harness are stamped in the usual manner, but with a recess a around the portion which directly takes the pull. A piece of steel c is brazed into the recess and hardened. The closed bottom of the recess serves to facilitate the brazing operation by retaining the molten brazing-material. When the metal between the inner face of the hook and the steel is worn through, further rapid wear is arrested by the steel. The recess may be open to the inner face of the hook.



27,094. Reid, A. Dec. 9.

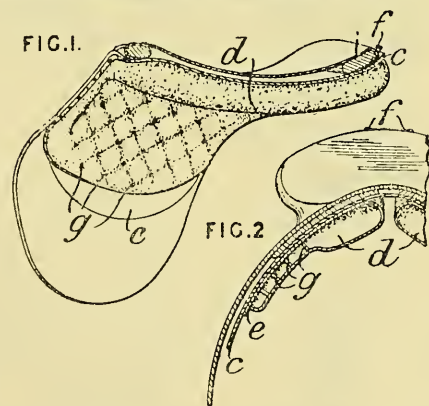
Fastening the chain links of backbands, traces, &c. The links F are connected to the links C,

attached to the backband A^1 in the manner shown, by means of a hook device consisting of a loop D



and a hook E which has a head E^1 sliding in a slot D^2 . The hook is shown open and locked, respectively, in Figs. 1 and 3.

27,359. Stern, P., and Stern, P. Dec. 11.

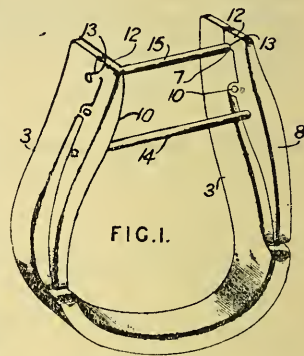


Saddles, riding, are provided with rubber or other pneumatic cushions d in lieu of the usual padding. The cushions may be divided into chambers; they are solutioned to a lining c of stiff leather, and provided with a rim e to permit them to be stitched to the lining and saddle. The lining is also stitched to the saddle. Each cushion has a valve f , which extends through a hole bored obliquely through the saddle-tree and lining and is secured in position by a nut. The saddle is ventilated by corrugating the inner sides of the cushions, or by means of tubes g passing through the cushions, or eyelets connecting their top and bottom portions, the escape of air being facilitated by piercing the frame of the saddle. Hinges may

be used in the upper part of the tree to permit the two sides to be folded together.

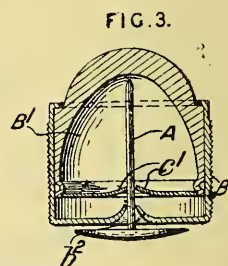
27,666. Whelan, J. A. Dec. 15.

Stirrups.—The stirrup strap is attached to a bar 15 which fits into sockets 7, 13 respectively formed in the sides 3 and heads 12 of the levers 8 pivoted at 10 and connected by the cross-bar 14. In case of accident, the rider's foot is pressed against one of the levers 8, which turn and free the bar 15 from its sockets, thus freeing the stirrup and the rider's foot.

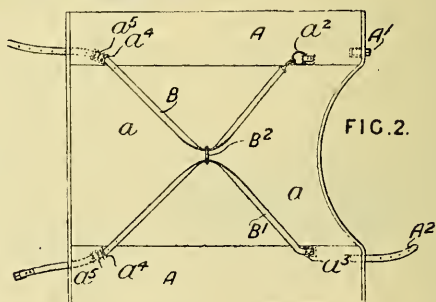


27,668. Hancock, J. Dec. 15.

Fastening clothing for animals. The shank A of the pin is gripped by spring arms c^1 which are preferably struck from a thin sheet-steel disc beaded to the cap B^1 . The cap slides in the outer casing B , which is formed with a cone b^2 that releases the spring arms when the parts B, B^1 are pressed together. The appliance is stated to be used, *inter alia*, as a pin for horse blankets.



27,806. Burge, J. Dec. 16.

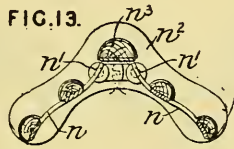


Clothing for animals—A rug for cows, horses,

&c. consists of a canvas &c. sheet A lined with blanketing &c. a, and fastened by two straps B, B', and by the buckle A' and the strap A² which crosses the breast. The straps B, B' are connected to the rug at a², a², pass through a ring B² which is placed beneath the animal, and then pass through holes a⁴ in the rug, and terminate in free ends which are to be buckled together behind the animal like a breeching-strap. Buckles a⁵ are fixed at the holes a⁴. The fastening at a² preferably consists of a snap hook and ring.

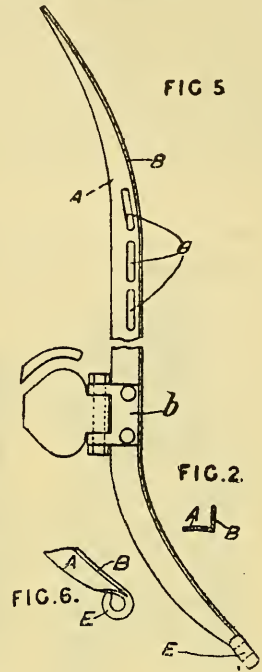
27,905. Shillington, T. F., and Hanna, J. A. Dec. 17.

Brackets and stands for.—Fig. 13 shows a harness support constructed of side frames n, which are pivoted at n¹ to a wall plate n² below a fixed bar n³ and can be secured in any desired position. In a modification, the frames n are pivoted centrally, and the bar n³ is dispensed with.



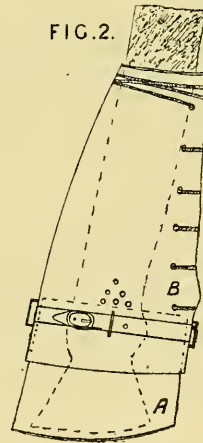
28,148. Parkes, T. W. Dec. 20.

Collars, neck, hames for. Each hame is made from a length of bar rolled to the section shown in Fig. 2. The part A bears against the body of the collar, and the part B bears against the forewale. The ends of the bar are trimmed down, as shown, and the bar is bent to the usual hame shape. The eye E may be formed by welding on a tubular piece and afterwards forging and punching it, or by simply bending up the end as shown in Fig. 6. The staple b for the hame hook may be riveted in place. Slots may be formed at e for connecting-straps.



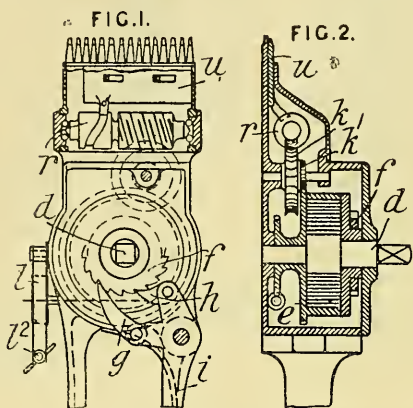
28,659. Herbert, C. W. Dec. 29.

Horse-boots.—A shoe or foot protector for animals affected with rot, halt, or other disease comprises a metallic part A provided with a watertight sole and a cork pad to absorb moisture or discharge, and an india-rubber, canvas, or other waterproof shield B attached by suitable fastenings to loops on the part A. The shoe forms a receptacle for carrying liquid or ointment.



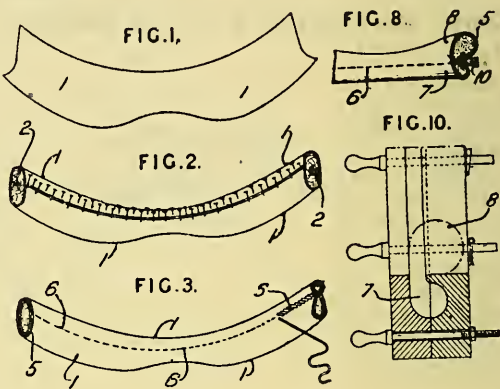
A.D. 1903.

85. Auerbach, K. Jan. 1.



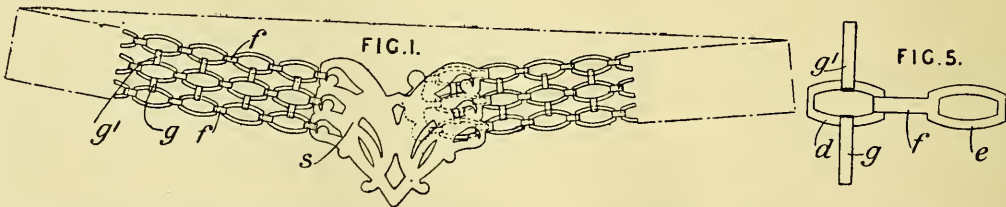
Horse clippers and the like.—Apparatus for clipping or shearing hair is operated continuously by clockwork mechanism, which is wound by a key, and kept wound, during operation, by the movement of the handles. The spring barrel or casing *e* is loosely mounted on the winding-spindle *d*, and a plate at one side of the casing is fixed to the spindle and carries a ratchet-wheel *f*, which is engaged by a pawl *g* on the pivoted spring-controlled handle *i* and by a detent *h*. The casing *e* is connected by worm gearing to a friction disc *l*, which is clipped between pivoted brake arms drawn together by a thumb-screw *l*² for controlling the starting, stopping, and speed of operation of the apparatus. The cutting-comb *u* is driven from the spring casing *e* by toothed and worm gearing *k*¹, *k* and a cam *r*.

1083. Gäck, R., and Spengler, F. H. Jan. 15.



Collars, neck.—The collar is made by stretching and nailing a piece of leather 1 over a suitably-shaped piece of wood &c. 2. The leather is then removed and lined with soft, *i.e.*, not cemented, felt &c. 5. The overlapping edges are then sewn together by a single row of stitches 6, which serve also to form the groove for the hame. The collar is then stuffed with straw, and is bent to proper shape, and the ends are joined together at what forms the top of the collar. Fig. 8 shows a form of collar where the inner surface is formed in a continuous curve. The lower ends of the hames 10 are connected by an eye, bolt, and nut, and the top ends are slipped beneath the separate leather piece covering the top. Fig. 10 shows a clamp for keeping the part 7 of the collar in shape while being stuffed. The clamp is in two parts held together by screws.

1347. Spittle, W. C. Jan. 20.



Materials; dog collars.—Relates to a construction of metallic chain-work made up from an assemblage of connected links into the form of openwork lengths of fabrics which may be utilized

as, or employed in the manufacture of various articles, including dog collars, ornamental harness, chainwork, &c. The chain may be made up from blanks of the shape shown in Fig. 5; the strip *f* is folded along a central vertical line, so as to bring the eyes *d*, *e* into coincidence, the part *e* of another blank is passed sideways through the link thus formed and is itself folded in a similar manner, and this is continued until a chain of the desired length is obtained. The strips *g*, *g*¹ serve to make

connection with the links of adjacent rows of chains, as shown in Fig. 1, which illustrates part of a waistbelt made up of chainwork of this character and ornamental stampings *s*. The chains may also be made in the manner described in Specification No. 22,531, A. D. 1902. This chainwork can be folded into tubular or hollow lengths, which may be used for making up articles of jewellery, bag and chatelaine handles, and the like.

1675. Levaillant, L. Sept. 9, A.D. 1902,
[date applied for under Patents Act, A.D. 1901].

Fastening; runaway horses, releasing.—A horse is released from a vehicle by special slip fastenings, such as shown in Fig. 2. These fastenings are used to connect the hames *a*, *a'* together and to the martingale *i*, to connect the reins *u* to the bit, and to connect the parts *l*, *m* of the girth together. The fastenings are released by cords *h*, *t* connected together and by a cord *z* attached to the hook 1. The fastening consists of a part *c* provided with a barrel *c*¹ and a part *d* hinged to the part *c* and provided with a socket *d*² for engagement with a spring bolt *e* in the barrel *c*¹. A socket may be formed at the end of the bolt *e* for a pin on the part *d*. The parts *c*, *d* may be cranked, as shown, or hooked.

FIG.1.

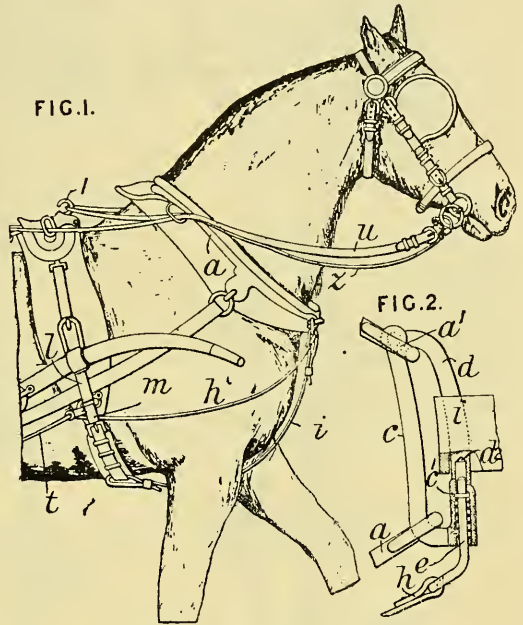


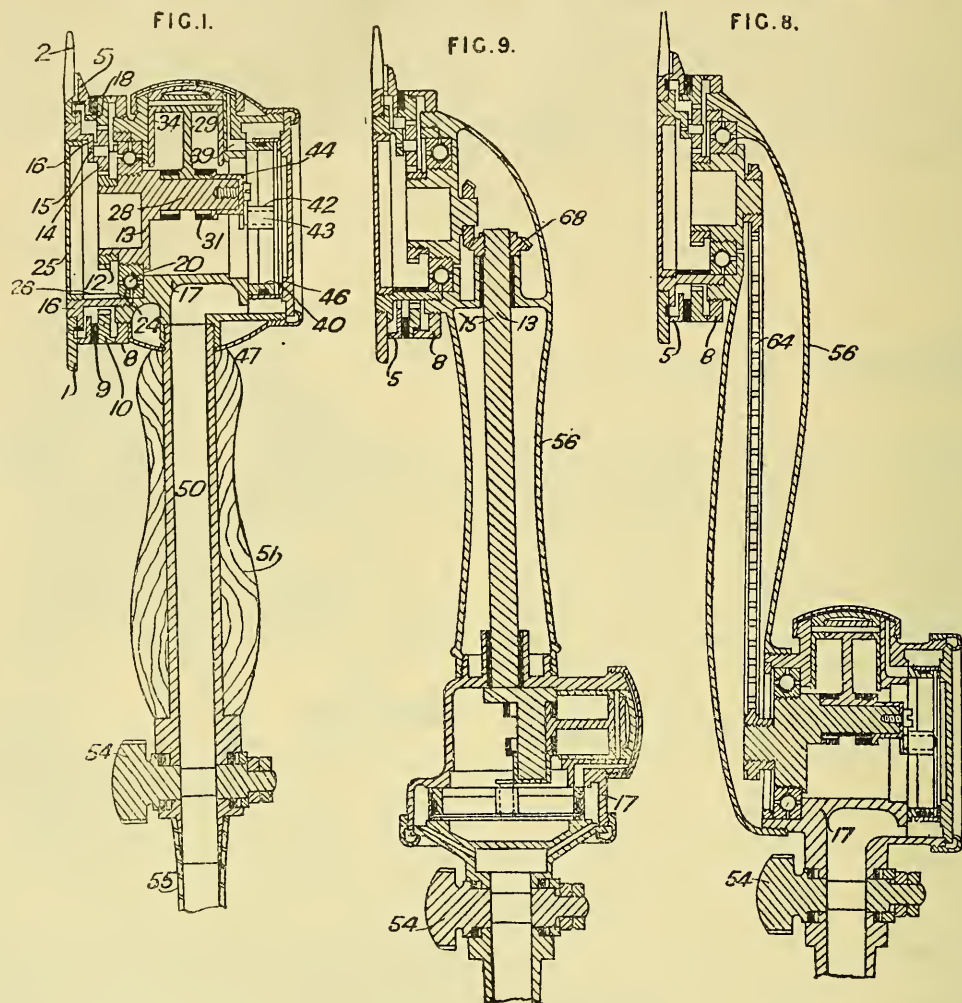
FIG.2.

1897. Meacock, T. Jan. 27.

Horse clippers and the like.—An apparatus for shearing hair or wool from sheep and other animals, rugs, skins, and the like, consists of a fixed comb over which rotary cutters are driven by a radial-cylinder compressed-air engine. In the machine shown in Fig. 1, the comb 1, the cutters 5, and the motor 17 are fixed on the end of the handle 51, through which the compressed air is supplied by a tap 54 and a flexible tube 55. The comb 1 is screwed to the head 16 of the apparatus with the teeth 2 projecting outwards, and the cutter 5 is pressed up to it by a flexible ring 9 of woodite &c. and an adjustable collar 8. The cutter is rotated by a spur-wheel 12 on the crank shaft 13 of the motor gearing with idle wheels 14 on studs 15 in the head 16, the wheels 14 driving an internally-toothed ring 10 with projections 18 entering elongated recesses in the cutter. The crank shaft 13 of the motor runs in ball bearings 20, which are adjusted by the screw cap 25 and the sliding ring 26 bearing upon the adjustable race 24. The motor has three radial

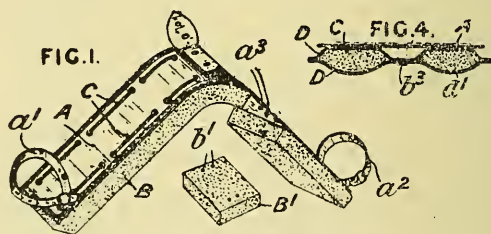
cylinders formed in the body 17 and containing three trunk pistons 34, which rotate the crank 28 by means of thrust rods 29. The inner heads of the rods 29 are enclosed by rings 31. The compressed air enters the cylinders through ports 39, over which is a circular valve or ring 40 connected by radial arms to a central boss 42, and driven by a pin 43 in or on a cap 44 on the crank-pin 28. The ring 40 is covered by a ring 46, a packing-ring 47 being placed between them. In a modification, the cutter and comb are mounted on a body placed further forwards than the motor, so that the pinion 12 gears directly with the ring 10 for driving the cutter. An extra flexible ring 9 is placed between the collar 8 and ring 10. In another modification, the crank shaft of the motor is placed in line with the tube 50, and the cutter, which is placed further forwards, is driven by a bevel-wheel on the outer end of the crank shaft engaging with external teeth on the ring 10. In the modifications shown in Figs. 8 and 9, the handles 56 are adapted for receiving at opposite ends the motors 17 and the cutters 5, which are connected in the one case by an endless chain 64.

and in the other case by a shaft 13 and bevel-wheels 68; according to the Provisional Specification, screw gearing may also be used. The adjustable collars 8 may be secured by spring pins or stops.



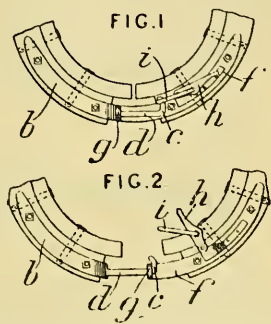
1913. Hartwell, E. B. Jan. 27.

Pads for saddles, collars, and other parts of harness. The pad is made in sections, or can be cut in sections, so that any part of it may be removed to allow a sore place to heal, after which the part may be replaced. Fig. 1 shows a saddle pad in which a strip of felt B is attached by lacing C to a backing A of fibre &c. Loops a^1 , a^2 are provided for fastening the backband &c. The block B¹ can be replaced and held by the lacing, as before, through the holes a^3 , b^1 . Fig. 4 shows a section of a collar pad in which a stuffed padding D, sewn in places b^3 to form puffs d^1 , is attached to a backing A by lacing C, as before.

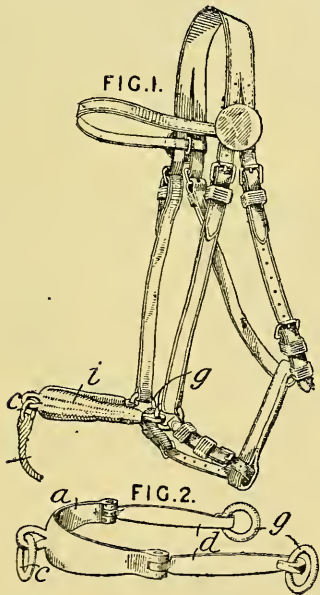


2061. Ulrich, P. Jan. 28.

Fastening.—Hinged collars are fastened at the bottom by a hook *c*, which engages with a loop *i* carried by the lever *h*. The shank *d* of the hook runs through an eye *g* on the plate *f*, to which the lever is pivoted. The hook is carried by the plate *b*. On releasing the loop *i*, the collar can be opened to an extent limited by the engagement of the hook with the eye *g*.



2315. Burton, J., Nutt, G., and Talbot, C. S. Jan. 31.

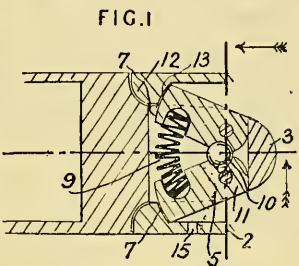


Bridles; horse breaking and training harness.—Bridles and the like for breaking-in and controlling restive horses are provided with a wrought-

iron noseband *a*, which carries an eye with a leading-ring *c*, and to which are jointed plates or bars *d*. The bars *d* are formed with closed hooks to take rings *g* which are fitted to the head collar or bridle as shown. The device is partially covered with leather *i* and padded with felt.

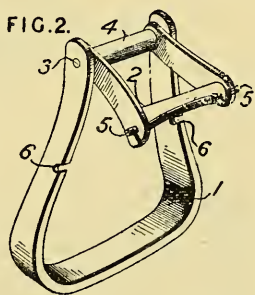
2425. Stuart, F. E. Feb. 2.

Fastening hames, collars, &c. A fastening particularly adapted for use with hinged horse collars such as employed in fire-engine stations consists of a nose-piece expanding within a socket. One end of the collar ends in a socket 2, Fig. 1, on which is formed an annular flange 12 against the inner surface 13 of which bear the pawls 5 pivoted in a longitudinal slot in the nose-piece 3 attached to the other end of the collar. The pawls are pivoted as shown and move together by means of a steel ball 10 carried in suitable recesses. A spring 9 presses the pawls outwards, their range being limited by shoulders 11 bearing against the nose-piece 3. The catch is disengaged by inserting a pin through a hole 15 in the socket.



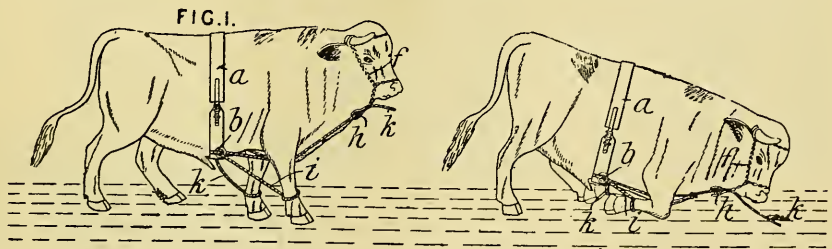
2478. Reid, W., Abbott, R., and Jones, W. R. Feb. 2.

Stirrups.—The upper ends of the stirrup 1 are connected by a rod 3, upon which turns a roller 4 for the stirrup strap. Between the roller and the ends of the stirrup are pivoted the arms of an instep support 2, which can swing freely to the rear to release the rider's foot, but is limited in its forward movement by the engagement of the pins 5 in the slots 6.



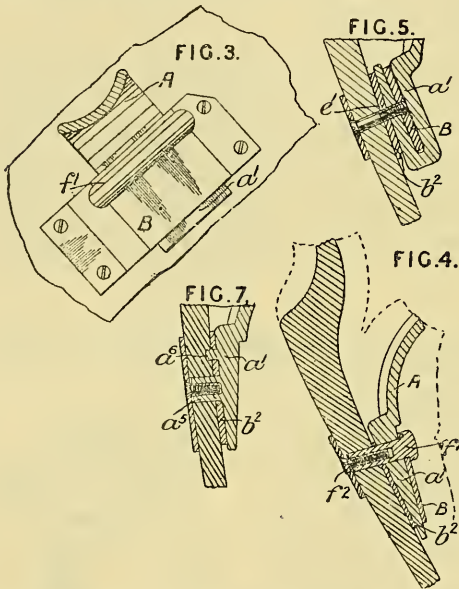
2761. Soffner, G. Feb. 5.

Throwing animals, harness for; halters.—For stopping runaway animals, particularly large cattle, a girth *a*, fastened round the body of the animal, is



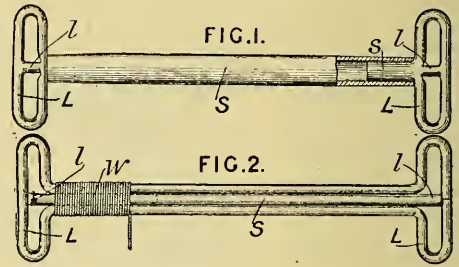
provided with rings *b*, through which pass ropes *i*, *k*, secured to the front legs. The halter has two connected rings, which pass over the horns and have chains *f* connected just above the nose, while the ends are joined below the head and fitted with a kind of tongs or forceps device *h*, through which passes the rope *k* to form a leading-line, the rope *i* being knotted thereto. By pulling the leading-rope, it is drawn through the forceps, so that the animal's legs are pulled back and its head brought down. The forceps have points inclined towards the front and penetrating into the rope, to prevent the latter from returning, but allowing it to be pulled out. The device is released by compressing the shanks of the forceps in the manner of a pair of pincers.

2832. Clarke, T. U. Feb. 6.



Saddles, side. The leaping-head *A* is formed with a wedge-shaped base, which can be secured on the saddle-tree in various positions and close to the upper crutch. The base *a'* is secured, by a pin having a bar head *f'*, and a screw *f''*, in a socket *B* which is pinned to the plate *b''* and the saddle-tree. The screw may engage directly with the base of the leaping-head. The base may be bent back, Fig. 5, so as to enter the socket from below; and a plate *e'* may be fixed to the saddle-tree. In some cases, the leaping-head is secured by a screw or screws passing into a projection or projections *a''* on the base or into the base directly, a stud *a''* fitting a hole in the plate and retaining the head in position. The position of the leaping-head may be adjusted by making the projection circular and providing a series of holes in the plate to take the stud *a''* or quadrant teeth on the base.

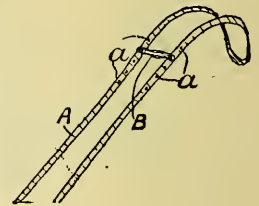
3539. Pitcher, G. Feb. 14.



Rein-holders.—The object is to lessen the difficulties of riding with the use of but one hand while performing equestrian feats, or playing games, such as polo. A metal tube *S*, Fig. 1, has fixed into its ends, which may be made to taper, the spigot parts *s* of the metal loops *L*, to which the reins are attached; the division piece *l* serving to divide the rein which goes to the check bit or rein from that connected with the ordinary bit. The central piece *S*, which is held in the hand, may be wrapped with any suitable material *w*, and may be made of wood fitted with ferrules; or the holder may consist wholly of wire, Fig. 2. Owing to the increased leverage obtained by the use of this device, a better control is exercised over the animal's head.

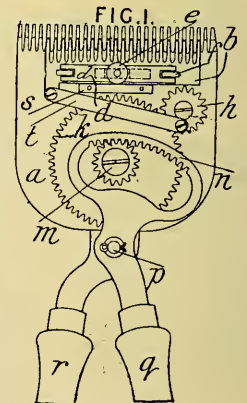
3728. Higginbotham, W. Feb. 17.

Rein-holders; bridles, reins for. A cross-handle *B* is adjustably fixed in any pair of holes *a* in riding or driving reins *A*. The handle may be used during driving &c., and serves also to space the reins apart and enable them to be easily picked up and put right if twisted.



3941. Gutteridge, H. Feb. 18.

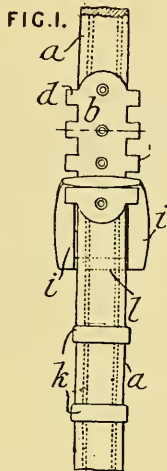
Horse clippers and the like.—In clippers or shearers for fur and hair, one handle *r* is rigidly secured to the lower shearing-plate *a*, and the other handle *q* is pivoted on a pin *p*. The handle *q* carries a toothed sector *n* which turns toothed wheels *m*, *k*, *h* pivoted in the lower shearing-plate. The wheel *h* is connected by a link *t* to the upper shearing-plate *b*, which can slide



along a guide *s* and is held in contact with the lower shearing-plate by rollers *f* carried by a spring *d* adjusted by means of a nut *e*. One stroke of the handles gives a number of strokes to the shearing-plates.

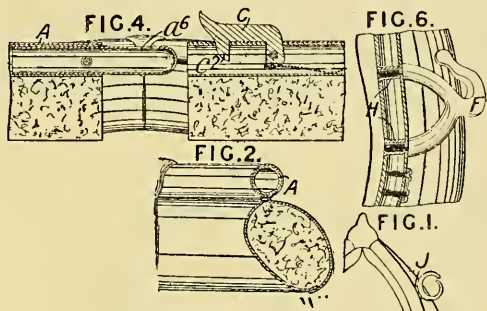
3955. Stevens, A. H. Feb. 19.

Fastening.—Relates to a fastening for straps or bands, especially applicable to the backbands of horses instead of a buckle. A bent frame *i*, having a solid or separate pivot bar *l* for attaching to one end of the strap or to the shaft tug, engages with side teeth *d* on a plate *b* attached by rivets or otherwise to the strap *a* or backband. The plate *b* is secured on to one face of the strap, and may have a strengthening-piece placed on the other face of the strap. The projecting teeth *d* may cover or partly cover the edges of the strap, or the plate may be inserted between two layers of material, the teeth being the full thickness of the strap. The plate may be centrally and transversely hinged, and two or more such plates may be used in the length of the strap. The adjustment is varied by raising the frame *i* and turning the strap edgewise, when it may be drawn to the required position. When secured, the free end is inserted under the loops *k*.



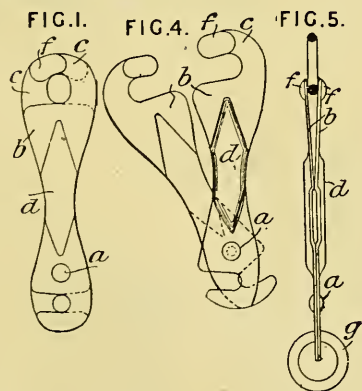
bevelled on the outside, and overlap. The engagement of a ring by this hook is effected by pressing the ring between the spring ends *c*. To unhook, the ring is turned and pulled, whereupon it escapes at the oblique depression *f*. The shoulder *d* strengthens the hook. The ring *g* is inserted before the two parts of the hook are riveted.

4779. Marlow, C. W., and Howell, D. March 2.



Collars, neck.—Horse collars are provided with metallic tubes *A* in place of the ordinary hames. The tubes and the collar are hinged at the top, to permit of the latter being opened, and the draught-hooks and terrets are screwed on to the tubes. The tube may be covered with leather, as shown in Fig. 2, or provided with flanges which are stitched, riveted, or otherwise secured to the collar. The collar is fastened at the bottom by a spring-controlled catch *C*, pivoted in one tube and having an extension *c*² adapted to engage a hole *a*⁶ in a hollow piece in the other tube. The draught-hooks *F* have screw-threaded ends, extending through holes in the tube and retained in position by countersunk nuts *H*. The terrets *J* have a single screw similarly secured to the tube.

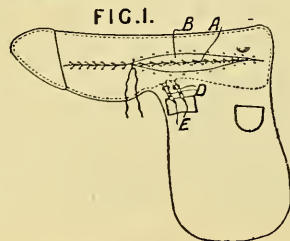
4373. Nolle, E. Feb. 24.



Tethering animals; fastening.—A spring or snap hook for fastening halter chains &c., which can be quickly unfastened, as in case of fire in stables for instance, consists of two similar arms *b* of elastic or spring material, riveted at *a*. The ends form hooks *c* which face in opposite directions, are

4782. Russell, P. R. March 2.

Saddles.—In pneumatic saddles for draught purposes, riding purposes, and the like, each pannel is formed with a laced slit *A* through which an air pad can be introduced or withdrawn. The air pad is enclosed in a laced casing *B*, and is composed of separate

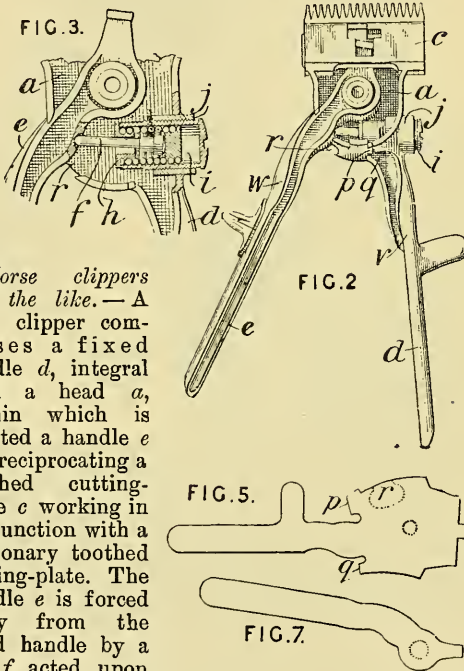


fore and rear chambers, which can be inflated through inflating-valves E and projecting tubes D. The transverse partition which separates the chambers of a riding-saddle is placed so that the leg of the rider can be pressed against either or both of the chambers.

5114. Forrester, T. F. May 26.

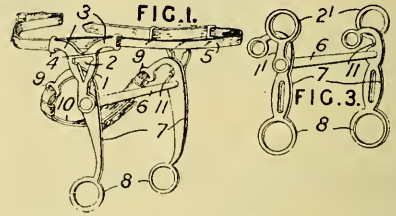
Clothing for animals; ornaments for unspecified articles.—Ornamental devices, such as crests, monograms, names, &c. are formed on textile or like strips, which are secured to the clothing of race-horses, ponies, or animals engaged in contests, so as to indicate the animal and its owner.

5209. Coates, G. H. March 5.



Horse clippers and the like.—A hair clipper comprises a fixed handle *d*, integral with a head *a*, within which is pivoted a handle *e* for reciprocating a toothed cutting-plate *c* working in conjunction with a stationary toothed cutting-plate. The handle *e* is forced away from the fixed handle by a pin *f*, acted upon by a spiral spring, one end of which is held from longitudinal movement by a flanged nut *h*. The tension of the spring can be adjusted by screwing the case *i* within its bearing *j*, which is brazed to the head. The head and fixed handle are formed from a sheet-metal blank, Fig. 5, which is pressed into shape, the edges *p*, *q* abutting, as shown in Fig. 2, and an opening *r* being cut as indicated by the dotted line. The handle *e* is formed from the blank shown in Fig. 7, and the handles are twisted at *v* and *w*.

5489. Johnson, W. C. March 9.



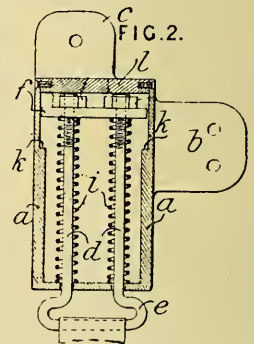
Bits, curb. As adapted for riding, the bit comprises cheek-plates 1, Fig. 1, which have central openings 2 for the reception of the headstall of the bridle, and arms 3, provided with openings 4 to take a noseband 5, while through openings in the lower ends of the cheek-plates 1 pass the ends of a mouth-bar 6 secured to or formed integral with side bars 7, the lower ends of which have rings 8 to take the ends of the reins, while the upper portions are bent and are provided with openings 9 in which may be secured an adjustable curb strap 10 for fitting round the lower jaw of the animal. Stop-pins 11, projecting inwards from the cheek-plates 1 engaging with the side bars 7, prevent the turning of the bit and the disengagement of the strap 10. A pull on the lower ends 8 of the side arms 7 will result in the clamping of the lower jaw of the animal between the mouth-bars 6 and the strap 10, by which means a wild or vicious animal may be checked. Fig. 3 shows a form of the invention adapted for driving purposes, the headstall and check or gag reins being secured to the rings 2'.

5960. Henning, R. F. March 14. Drawings to Specification.

Clothing for animals.—Weights are applied to the clothing of animals, so that a continual pressure or strain is exercised on the parts of the body to be trained or developed.

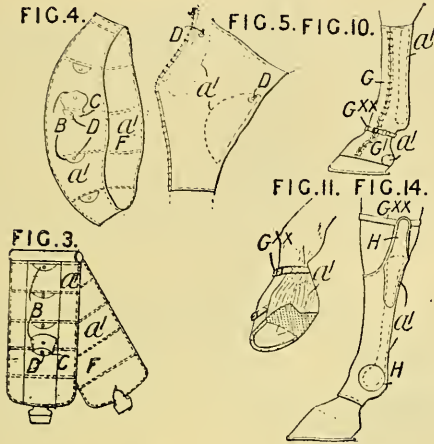
6218. Bäuer, L. March 17.

Stirrup straps, suspending.—The arms of a member *d* pass through the bottom of a casing *a* attached to the saddle frame by flaps *b*, *c*. These arms carry helical or spiral buffer springs *i* and a cross-piece *f* the down and up play of which is limited by the shoulder *k* and cover *l* respectively. The stirrup strap



passes through the loop *e*; and any sudden shocks are taken up by the springs.

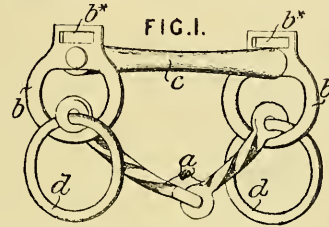
6431. Aulton, E. M. March 20.



Pads for; lining and padding; collars, neck; saddles; elbow pads; horse-boots.—Pneumatic pads are provided for harness and saddlery. Rubber bags *C* are contained in separate compartments *a*¹, arranged to suit the anatomy of the animal, permitting of pressure being applied to or moved from a particular spot. The bags have rubber valves *D* which are inserted through holes in flaps *B*, the flaps being then pushed into the compartments. Harness pads, Fig. 3, false collars, Fig. 4, numnahs, and the like are made of canvas, leather, or other material, with a linen, serge, or basil-leather lining *F*. The series of compartments *a*¹ is formed by stitching or otherwise. These pads, collars, and numnahs are secured in harness and saddles instead of the usual padding, and prevent saddle and collar galls. The pneumatic lining may be attached directly to saddle-trees and collar frames by pockets, straps, and studs. Moulded rubber hock-caps, Fig. 5, for applying pressure to thorough-pins, spavins, and the like, retaining dressings in place, &c., are laced to the limb, and the compartments *a*¹ are solutioned to the cap in the required positions. The valve *D* may extend outside the compartment as shown. Rubber horse-boots, Figs. 10 and 14, for supporting joints and the like, preventing sprains, preventing interfering, &c., have pneumatic compartments *a*¹ arranged as required. The boots are secured by lacing and straps *GXX*. An extra thickness of rubber *H*, lined with canvas, leather, or zinc, may be provided over the parts liable to be struck by the shoe. The over-reaching boot *G*¹, Fig. 10, and the tendon boot *G*, for racing and polo horses, may be made separately, as may the speedy-cutting boot forming the upper part of the one shown in Fig. 14, and the combined tendon and striking boot composing

the lower part thereof. Caps, Fig. 11, with pneumatic compartments *a*¹, are used to cover the heels of the animal in the stable to prevent capped elbows.

7496. Shepstone, S. W. B. March 31.

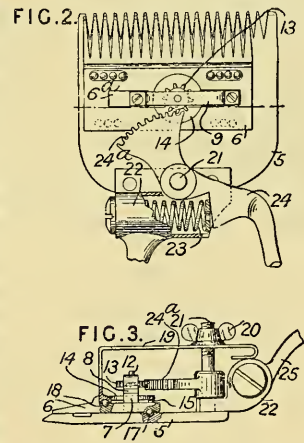


Bits.—A bit for horses or other animals is formed with a snaffle *a* extending through eyes *b* connected by a rigid bar or bit *c* covered with rubber. The reins are attached to rings *d*, and the cheek straps to slotted lugs *b*^{*}. The bar *c*, instead of being rigid, may consist of two studs riveted to the eyes *b* and connected by two links.

7893. Long, W. J., Pelton, A. R., and Tift, C. J. April 6.

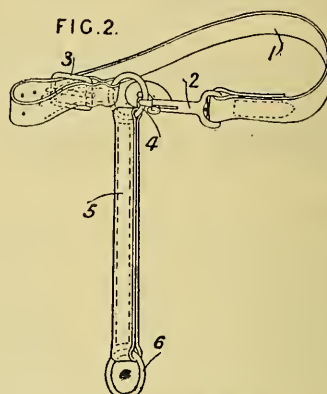
Horse clippers and the like.—To

increase the relative action of the movable cutting-plate 6 of hair clippers, it is provided with a slot (not shown) at right-angles to its direction of movement, into which gears a pin 15 on a disc 14, keyed on the spindle 12 of a pinion 13, actuated by segmental gear 24^a on a lever 24. This lever is pivoted on the post 21 and has a shoulder engaging a spring 23 enclosed in a case 22 to which a handle 25 is attached. A bed-plate 5 is provided with lugs 7, which project up through slots 6^a in the plate 6 and carry bridge pieces 8, 9 supporting the pinion and disc. Ball bearings 17, 18, respectively, are placed between the plates 5, 6, and between the upper plate 6 and the lower front edge of a housing 19 secured by a thumb-nut 20. The movement of the handle 24 in either direction imparts a complete reciprocation to the movable plate.



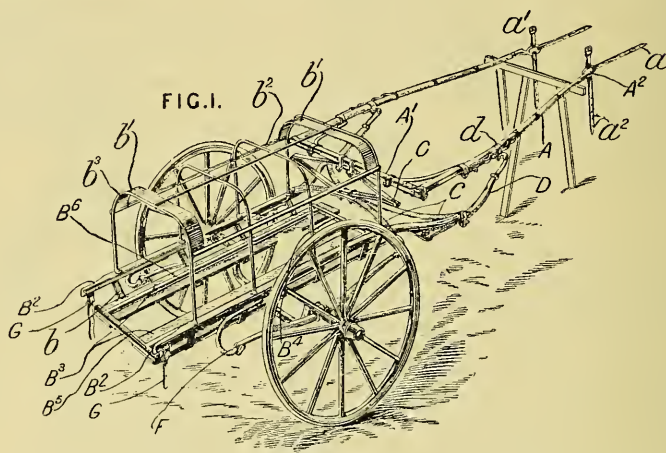
7973. Clapham, J. N., and Clapham, G. S. April 6.

Stopping runaway animals.—To prevent a horse from running away with an unattended vehicle, the strap shown in Fig. 2 is passed through a wheel and round any convenient fixed part of the vehicle, and is attached to the reins, so that the wheel is locked and the reins drawn up as the horse moves forwards or backwards. The spring hook 2 and the strap 1 are passed round the shaft or scroll of the spring, and then round the felloe, and the hook 2 is placed in the ring 4. The ring 6 and strap 5 are then passed through the wheel, and the reins are tied to the ring. The length of the strap 1 may be adjusted by the buckle 3. According to the Provisional Specification, the strap 1 may be replaced by a chain or the like.

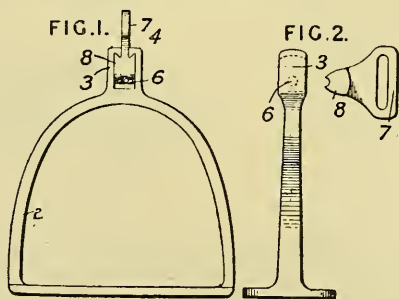


8484. Avery, L., and Mills, B. W. April 14.

Fastening belly-bands, saddle girths, and traces or tugs. The ends of the shafts A of an ambulance vehicle are fitted with trace attachments *a* and girth connections *a'*, *a''*, which are attached to rings A² set in from the shafts and bearing against the saddle.



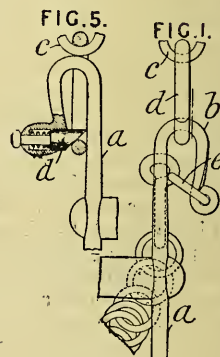
8504. Birtels, J. M. April 14.

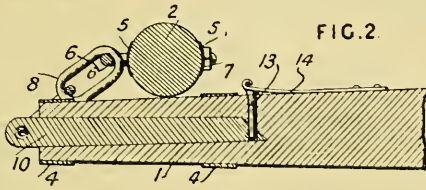


Stirrups.—A stirrup arranged to release the foot of the rider when thrown from his mount comprises an ordinary stirrup iron with projecting arms 3 connected by a rod 6 and having their ends 4 grooved or undercut. The saddle strap is attached to a loop 7 provided with a head 8 to fit between the arms 3 and recessed to fit upon the rod 6. In the case of a wooden stirrup, the arms are formed integral with a yoke secured to the stirrup frame by a suitable cross-pin.

8613. Dewsbury, A., [trading as Dewsbury & Sons, J.]. April 16.

Bits; fastening.—The bridle check bars *a*, Fig. 1, of a polo or other bit are formed with hooks *b*, and the cheek straps *c* are connected to them by loops or other attachments *d*, which are prevented from slipping out by loosely-pivoted drop rings *e*, or by spring bolts *d*, Fig. 5, or like devices. The rings *e*, Fig. 1, may be pressed into position by springs.

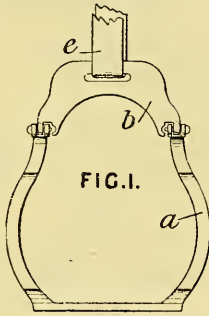


8695. **Dunn, J. J.** April 16.

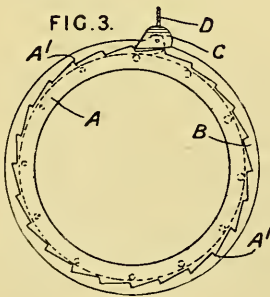
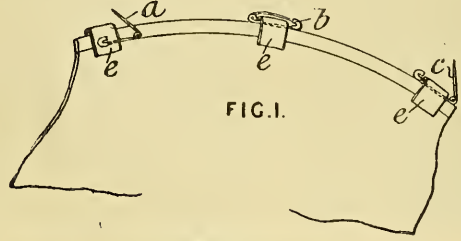
Yokes, neck; fastening.—Relates to means for detachably securing a neck yoke 2 to a vehicle pole 1. The neck yoke is fitted with metal plates 5 through which pass eye-bolts 6 secured by nuts 7. The eye-bolts are connected by a chain 8, of which the middle circular link carries a tapering plug 10 adapted to fit into a corresponding hole in the plug. The plug is normally held in position by a pin 13 carried by a spring 14, which can be raised to release the plug and with it the neck yoke. The pole is strengthened by bands 4.

8994. **Belloni, L.** April 21.

Stirrups.—Relates to a stirrup constructed so as to permit the foot of a rider to be disengaged therefrom in the event of a fall. The lower part *a* of the stirrup is hinged to the upper part *b*. Should the rider fall, the stirrup strap *e* remains oblique while the part *a* revolves into a vertical position.

9233. **Morony, J. B.** April 23.

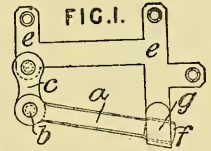
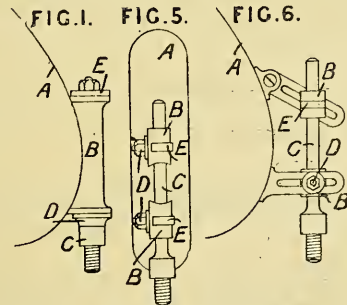
Rein-holders.—A device is attached to the nave of a road vehicle wheel, which tightens up the reins if the horse or other animal attached to the vehicle starts forwards. It consists of a ring A with ratchet teeth A' fixed to the nave, and a ring B running freely on ball or roller bearings in a groove on the ring A and having pivoted to it a pawl C formed with an eye D for the attachment of a strap or the like connected to the reins. If the horse pulls the vehicle forwards, the pawl C is carried round with the wheel and tightens up the reins. Backing causes the reins to be released again. A dust shield is placed over the ring A.

10,105. **Janssen, W.** May 4.

Clothing for animals.—A bandage for wrapping the body, chest, and neck of a horse, cow, or other animal, consists of a wide, elastic, circularly-knitted, tubular band, as shown in Fig. 2, sewn or hemmed at both ends. The fastening-end is provided with tapes *e* forming socket-like openings for the passage of the shanks of safety-pins *a, b, c*, which fasten the bandage. Two tapes or the like, or a strap and buckle, are provided at the front edge to hold the bandage when rolled up and not in use.

10,136. **Taylor, W. H.** June 17.

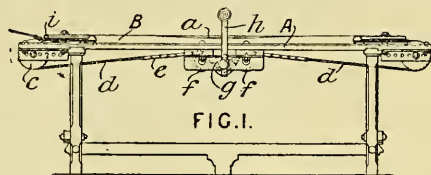
Stirrup straps, suspending, safety saddle-bars for. In order to free a rider when thrown, the stirrup straps are suspended from bars *a*, of which the rear ends *b* are pivoted in links *c* hinged to plates *e* secured to the sides of the saddle-tree. The fore ends *f* of the bars *a* are, normally, held in hooks *g* by the vertically-downward pressure on the stirrup straps, but, when the rider is thrown in any direction, the bars are released from the hooks to free the stirrup straps.

10,246. **Weston, B. S., and Wilton, H. S.** May 6.

Saddles.—The pommels and leaping-heads of side saddles can be adjusted and secured on pins *C* fixed to the saddle-tree. In the arrangement shown in Fig. 1, the head *A* is carried by a sleeve *B*, which can rotate upon the pin and can be locked

thereon, against a shoulder D, by a nut and a coned or other washer E on a square part of the pin. The lugs B, Fig. 5, can rotate on the pin and move vertically thereon. They are secured by screwing-up nuts D on flat eye-bolts E, which are fitted in slots in the lugs and through which the pin works. To provide for adjustment to any position, the head A has slotted links, Fig. 6, one of which is fixed while the other is pivoted thereto, through which the eye-bolts E pass. The Provisional Specification states that the improvements relate to heads as described in Specification No. 13,985, A.D. 1894.

10,472. Imgraben, G. May 8.



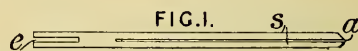
Collars, neck.—Relates to apparatus for stuffing horse-collars. Two adjustable grooved pulleys *c* are mounted on a table A, whereon the tube B of which the collar is to be made is fixed in position by a bar *a*. A chain *e*, passing over pulleys *f* and under a chain-wheel *g* provided with a crank handle *h*, is detachably fastened to the ends of a cable *d* passing over the pulleys *c*. The main body of the tube B being pressed under the bar *a*, the pad of the collar is filled by placing the thinner end of a bundle of straw or other suitable material in one of the loops *i* in the cable *d*, and then drawing the straw into the pad by turning the handle *h*. On reaching the narrowed middle portion, the straw is arrested, and continued turning of the handle disengages the loop. A wisp placed in the loop at the other end of the cable *d*, brought back to its mean position, is then similarly introduced by turning the handle in the opposite direction. This operation is repeated until the pad is filled, when it is turned round so as to be held under the bar *a*, the main body of the tube being passed over the cable *d* to be in like manner filled with wisps from left and right alternately. During filling, it is advantageous to damp and beat the collar from time to time.

10,588. Thomas, A. G. May 9.



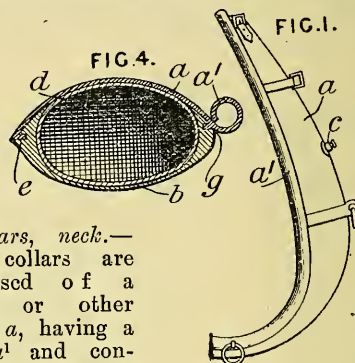
Reins, pillar; halters.—Pillar reins and halters are made of galvanized steel wire rope instead of leather. The end of the rope *e* may be bent round an eye *a* and spliced and bound at *b*. A hook *d* is attached to the eye *a* by a link *c*. In the case of a pillar rein, a hook is provided at each end. In a halter, one end is attached to a cross-bar, to carry a weight.

11,270. Willutzky, O., and Peters, A. May 18.



Spurs.—A process for the manufacture of spurs without the application of heat, consists in rolling or drawing metal bars to an oval or other suitable cross-section, cutting the bars into strips of the required length, sawing longitudinal slots *a*, and then bending the branches *s* into the usual horse-shoe shape. A slot *e* for the wheel of the spur is also made by sawing.

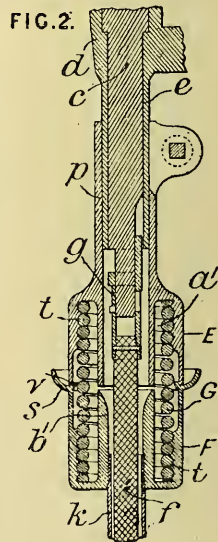
12,211. ChiloteGuy, J. E. May 28.



Collars, neck.—The collars are composed of a metal or other cover *a*, having a rim *a'* and connected by flanges *e*, *g* to a rubber part *b*, the interior being occupied by one or more pneumatic pads *d*, inflated by means of nozzles *c*.

12,246. Wolseley Sheep Shearing Machine Co., and Austin, H. May 29.

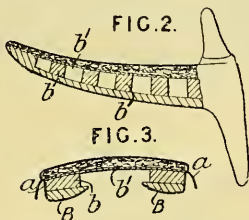
Horse clippers and the like.—Flexible shafting for use in wool &c. shearing and clipping machines, especially of the "Wolseley" system, have the flexible shaft enclosed in a rigid case jointed to the lower part of the bracket carrying the driven bevel-wheel. The lower end of the flexible shaft is connected by a short rigid portion with a crown-wheel. A second crown-wheel, on the shaft leading to the shearing &c. machine, gears with the crown-wheel on the flexible shaft. Fig. 2 shows a section of the coupling. The axle *c* of the bevel-wheel passes through the



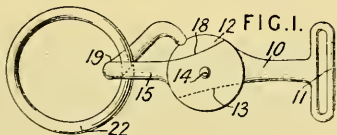
bracket *d* and is connected to the flexible shaft *f*, preferably catgut, by means of a bryonet fastening *g*. A tube *E*, having a split clamping-socket *p*, is mounted on the tube *e* of the bracket and is screwed internally at *t* to engage with one end of a spiral spring *G*. The other end of the spring *G* is similarly engaged in a socket *F* carried by the casing *k*, and the spring is strained so as to be under tension. The socket *F* has external and internal lips *S*, *v* so as to pivot when turned about any point of the edge of the socket *E* and also to act as a guide for any oil which might pass down the outer part of the socket *E*. Each socket has an inner tube *a'*, *b'*, the lower tube *b'* having a flared bore.

12,325. Robson, T. May 29.

Saddles.—Saddles for horses are made with separated ribs *B* built up partly of cork blocks *b* so as to leave ventilating-spaces. In ladies' saddles, holes *a* are made in the leather at the sides of the saddle opposite the spaces. In men's saddles, the holes are made at the front. A steel plate *b'* rests on the blocks *b* and forms a base for the seat.



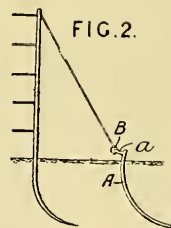
13,219. Morrow, W. P., Thomas, J., and Thomas, H. L. June 12.



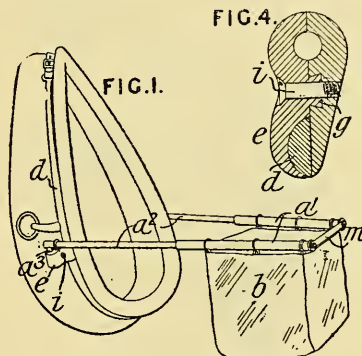
Fastening, hooks for. A hook fastening for harness and other purposes comprises two parts 10, 15 pivoted together at 14. The part 10 terminates in a disc 12 having a portion 13 removed. The forked hooked member 15 embraces opposite sides of the disc and has one side 18 cut away. The part 15 extends forwards and is bent in a plane at right-angles to that of the strap loop 11, to form a depression 19 sufficiently deep to hold the link or ring 22 in line with the loop. It is then bent upwards and backwards, and terminates adjacent to and in the same plane with the disc. To remove the ring, the hook member 15 must be rotated on its pivot 14, and the ring then turned half-round and withdrawn.

13,322. Ryan, H. T. June 15.

Tethering animals.—Ground pegs used for picketing horses, tent-pegging, supporting wire fencing, and for other purposes are curved in the segment of a circle, to give a greater hold on the ground than the usual straight peg. The peg *A* is preferably made of cast steel of any desired section, and provided with an arm *a* and attachment ring *B*. The peg formation is applied to the spiked ends of standards for wire fencing &c. The Provisional Specification states that a second peg is sometimes passed through the ring *B* and driven in the ground in the opposite direction to the peg *A*.



13,504. Connor, T., and Williams, J. June 17.

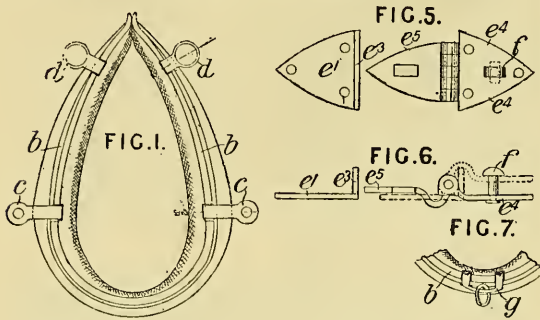


Nosebags.—The nosebag is attached to the collar to leave the horse's head free. The nosebag *b*, Fig. 1, is attached to tubes *a'* which telescope on rods *a'* having lugs *a'* stepped in brackets *e* fixed to the hames. A stretcher *m* keeps the bag open. The bracket *e*, Fig. 4, is in two pieces held together by a dovetail *g* and screw *i* and encloses the hame *d*. The arm may fold up instead of telescoping. The Provisional Specification also states that the nosebag may be suspended from the pole of the vehicle.

13,798. Fell, W. T. June 20.

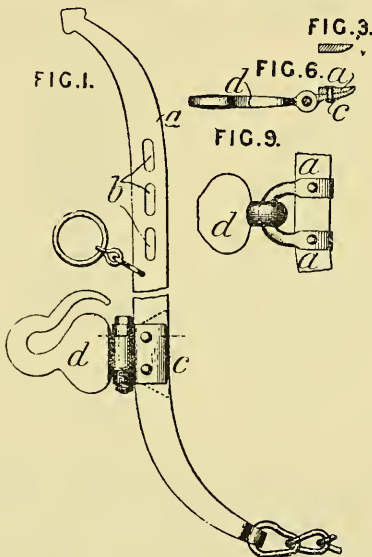
Collars, neck.—In collars with open tops and spring steel or other metal hames, as described in Specification No. 11,534, A.D. 1892, the terrets *d*, Fig. 1, tugs *c*, and, if for double harness, the bottom rings *g*, Fig. 7, are formed with eyes which are threaded on the spring hames *b* before applying the leather covering. The collar is fastened at the top by means of a hasp *e*, Figs. 5 and 6, hinged

to a plate e^1 on one side of the collar, and arranged to pass through a slot e^3 in a plate e^1 on the other



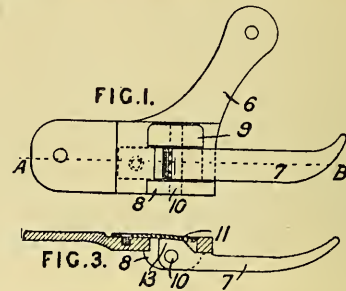
side of the collar and to be turned back and fastened by a turn-button f .

13,905. Whoway, S. B. June 22.



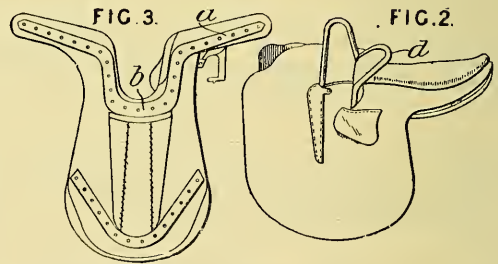
Collars, neck.—Hames are made of rolled steel or other bars a , which are rounded off to an edge as in Fig. 3, or curved along the whole of one side, as in Fig. 6. The ends of the bars are tapered and bent to the required shape to form the side pieces of the hames. Their upper parts are pierced with holes b to take straps for connecting the two side pieces; or, instead of making holes in both sides, the thick edge of one of them may be formed with notches. The sides are provided with eyes to take the chain at the bottom of the hames; they may also have eyes at their tops. The plates c , the edges of which may be extended as shown in dotted lines, or the staples shown in Fig. 9, to which the draught hooks d are jointed, are shaped to fit the curved faces of the hames. Their edges may be bent round the edges of the side pieces, Fig. 6.

14,382. Butler, E. R., and Woolley, J. June 29.



Stirrup straps, suspending, safety saddle-bars for. The saddle-bar consists of an arm 7 hinged between lugs 8, 9 on the supporting-plate 6. It is held, normally, in the position shown, by a knife-blade spring 11. If the rider is thrown, the pull of the stirrup strap turns the arm on the pivot 10 until the strap is freed. To facilitate the freeing of the strap, the underside of the arm is tapered at the end.

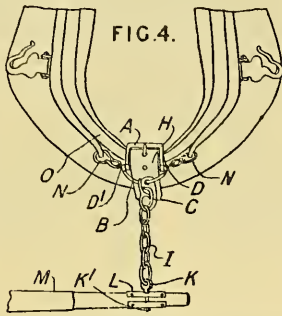
14,490. Cradock, E. June 30.



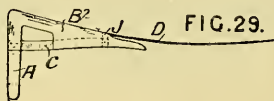
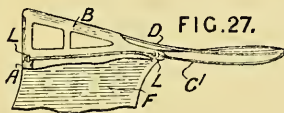
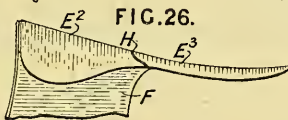
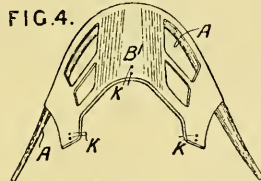
Saddles; saddle cloths.—The tree a of a side saddle is constructed with both sides of the same shape and with a deep cut b at the bridge, and the thickness of the numnahs or saddle cloths is reduced along the centre line and may be varied by the interposition of layers of felt, so that the same saddle may be used for different horses. The numnah, covered with leather on the side in contact with the horse, is fastened by side straps to the points of the tree and, at the back, to the cantle, which is raised so that the seat slopes slightly towards the bridge. A piece is cut out of the cloth so that it may go behind the wither instead of over it. The lower pommel d is placed lower and further back than usual, while the bellies of the seat, preferably built of cork blocks with top steel plates, are on the same level on both sides and are curved in towards the centre at the place where the left leg drops. The fore part of the seat at the off side is widened.

14,775. Owen, W. July 3.

Fastening; pole chains.—The collar O is connected by a chain I to the yoke M of a reaping, mowing, or harvesting machine a cultivator, a potato digger, or the like. The lower end of the chain carries a pin K, which passes loosely through plates L secured near the end of the yoke M and which is retained by a riveted nut K'. The upper end of the chain engages detachably on to a double-pointed hook C hanging freely from an eyeleted staple B, which is connected to a buckle A by a bolt D and nut D'. The buckle is attached to the collar by a strap H and has a projection which rests on the throat chain N of the hames.

**14,790. Boyce, G. F. July 3.**

Saddles.—The trees of riding-saddles are made of metal stampings or forgings, or are built up of metal tubes or channels and stampings, and the seats and skirts are made in one or more pieces of leather or other materials stretched on wire or like frames, and are padded, lined, and strengthened with waterproof or other fabrics, leather, &c. Fig. 4 shows a tree with a tubular head A united to a forged or like fore part B'. The head A may have an elliptical section, and may be strengthened by horizontal rivets, and by a rib or liner, which may be formed by the turned-down front edge of the fore part B'; or the head may be made of bars having various sections, such as single or double channels or troughs, or of D-shaped or segmental tubes, the front edges of the fore part B' being bent or stepped to adapt them to the various heads A. The skirted or skirtless top E², Fig. 26, is made in one piece, and is connected at the seam H to the seat E³, or may be made in two pieces



connected by a longitudinal seam. The front of the piece E² is lengthened to enable it to be connected to the flaps F and the panel. The rib D, Fig. 27, is connected to the fore part B by rivets in the

FIG. 30.



FIG. 31.

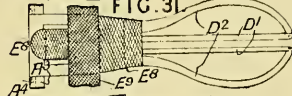


FIG. 33.

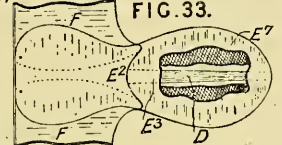


FIG. 35.

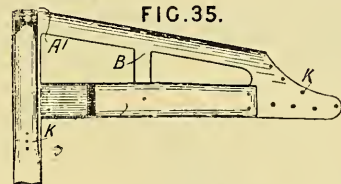


FIG. 44.

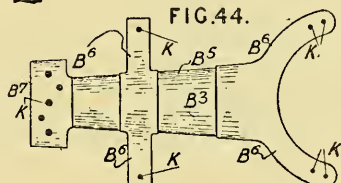
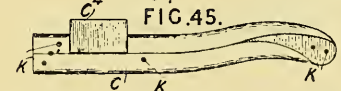


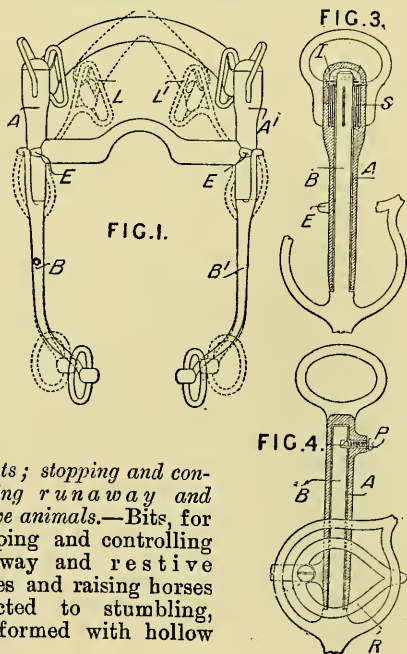
FIG. 45.



holes K, Fig. 4, and the wire C' forming the seat outline is passed through lugs L. If more than one wire is used, they are first enclosed in fabric and sewed to the seat E³, which is then riveted to the tree fore part. In the modification shown in Fig. 28, the spring outline C³ consists of a flattened or circular spiral of wire, the ends of which are attached to the tubes c on the head A. In the modification shown in Fig. 29, the head and points are stamped, the stamped or forged side bars C being riveted to the head A. The part B² of the tree is made of leather, and is sewed to the bars C, and is strengthened by a metal, leather, fabric, or other connection J. The extension bar D of the seat is riveted to the head, to the part B², or to the connection J. Fig. 30 shows a combined seat and skirts made in two parts E' connected by a seam H. When a fore piece is not used, the flaps are made large enough to be passed up under the skirt tops, and are sewed to the panel &c. Flaps are fitted to cover the openings through which the stirrup leathers are passed. Fig. 31 shows a tree with an open cantle, the seat outline being formed by bars D² connected to the back bars D' and the cross-pieces J, Fig. 29, and to the bars c, Fig. 28.

The bars are covered with leather, and the skirts are covered by a fabric E^8 and provided with strap webs E^9 . The tree head consists of three parts; the front part A^4 has a C-section, and contains a liner or filling-piece extending to the lower edges of the bars C, the front parts of which or of their equivalents fit over the plate A^3 and up to the rear edge of the plate A^4 . The plate A^3 may be duplicated and formed with grooves carrying a liner. The bars D^1 may be connected by leather straps or the like. Fig. 33 shows a combined skirt and top fore part E^2 , which is sewed to a leather seat E^3 reinforced with a textile fabric E^7 , and is formed with pockets for receiving the rear end of the tree fore part &c. Seams of stitches or rivets run along each side of the back bar D. The seat may be covered with hogskin, mackintosh, &c. The head and fore part may be stamped in one piece of the form shown in Fig. 35, and may be strengthened by tapering tubular liners A^1 . Grooves for the stirrup leathers and the web E^9 , Fig. 31, may be made in the part B, Fig. 35. Short panels are placed under the sides of the fore part B, and may be extended to the full length. The side flaps F, Figs. 30, 33, &c., may be sewn to the combined seat and fore part covering, or may be formed with the fore part covering. The member B^3 , Fig. 44, consists of a central bar B^5 with lateral channels and connecting-pieces B^6 , B^7 . The member may be stamped in one piece, or the parts may be riveted or brazed together. The short bar C, Fig. 45, is connected to the member B^3 and to the saddle-tree heads A by rivets K. The bar C is cut as indicated by the elevated member C^4 , which may be cut off flush with the top edge of the bar, or may be bent to form a keener edge than the remainder of the bar.

15,328. Lamarque, B. July 10.



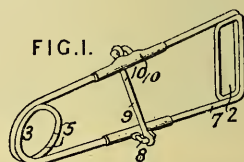
Bits; stopping and controlling runaway and restive animals.—Bits, for stopping and controlling runaway and restive horses and raising horses addicted to stumbling, are formed with hollow

side pieces A, A^1 , within which rods B, B^1 can rotate. These rods have arms L, L^1 , which may be connected by a noseband and can be moved, by the reins or guides, so as to close the animal's nostrils, as shown by dotted lines. The movement of the arms is limited by stops E, and influenced by springs S held in position by discs. The chambers containing the springs are hermetically closed by caps I. In Fig. 4, the arm is shown as being controlled by a flat spring R, screwed to a projection on the piece A, the movement of the arm being limited by a screw P engaging a groove in the rod B.

15,331. Ellsworth, J. F. July 10.

Fastening halters &c.

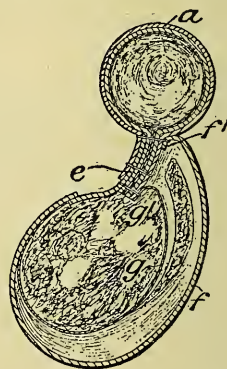
A snap-hook is made from wire bent to form a strap-receiving part 2 and a split open ring 3. The side-pieces 7 are bent into open loops 8, which are connected by a bar 9, the object of which is to move the ends 5 obliquely apart, when the ring 3 is opened by compressing the sides of the hook. Split sleeves 10 surround the sides 7 and bridge the spaces left by the loops 8.



15,533. Loveday, W. G., and Loveday, T., [trading as Loveday & Sons, R.]. July 14.

Collars, neck;

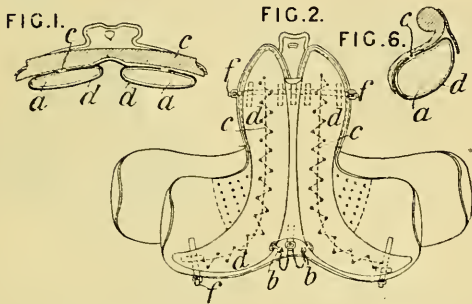
lining.—The collar has a deep groove between the fore and after-wale to prevent the harness from slipping off. The fore-wale leather a and its linings are cut wider than usual and sewn together with the barge e to form a broad stiff bottom to groove. At the fore end of this portion is sewn the front f^1 of the basil-body side f and, at the after end, the front g^1 of an inner body g, both these bodies being brought round and laced or otherwise attached to the barge.



15,596. Villette, E. P. A. July 14.

Pads for.—Pneumatic pads are employed instead of the usual padding in harness and saddlery.

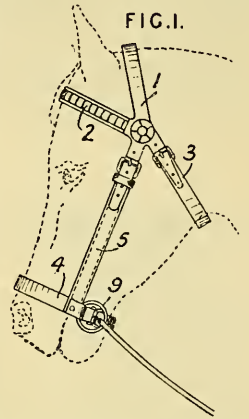
Figs. 1 and 2, the latter a view from below, show the pads fitted to a saddle, and Fig. 6 to a collar. The india-rubber air chambers *a* are inflated by means of the valves *b*, and are contained in canvas



or supple leather covers *d*, the edges *c* of which are laced together, the cover being fastened to the saddle &c. by straps *f*.

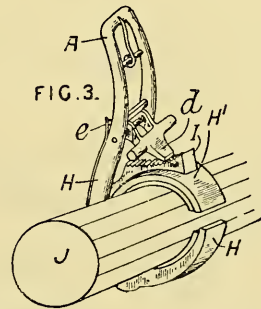
16,522. Arnesen, C. July 27.

Bridles for use without bits. The bridle consists of a crown strap 1, brow-band 2, and throat strap 3 connected by a rosette, and a loosely-fitting nose-band 4, riveted on each side to a rigid link 5, carrying a buckle to engage with a short band extending from the rosette. The links 5 have loops with rings 9 to take the reins. By arranging along each link a chain or the like, connected thereto at its lower end and passing, through an eye on the rosette, to the driver, the pull on the horse, when driving downhill, may be transferred from the noseband to the browband, or distributed between the brow and the nose.

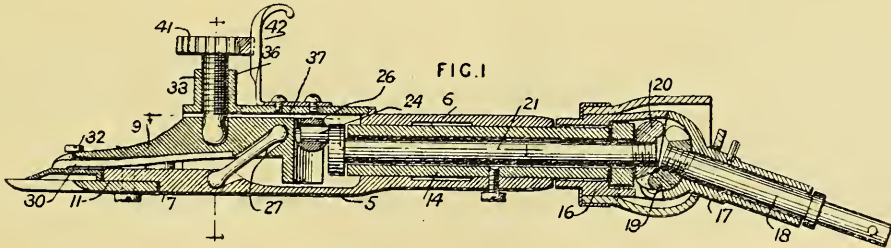


16,553. Benner, L. W. July 28.

Tugs, shaft.—A shaft tug is formed by a hooked-shaped piece of metal *H* with a buckle *A* at one end and a hinged piece *H'*, which can be fastened down by a catch *d* to cause it to grip the shaft *J*. The parts engaging the shaft are lined with rubber or other yielding material. The catch *d* engages ratchet teeth *I* on the back of the part *H'* and is pressed down by a spring *e*.



17,213. Cahill, W. M. Aug. 7.



Horse clippers and the like.—The trough body 5 bearing the comb-plate 11 on the broadened fore-part of its base and having a tubular handle 6 to contain the driving-shaft 21 with a sleeve 14 is closed by a cover-plate 37 held by side screws, and the vibrator 9, to which the cutter 30 is attached by screws 32, has for its pivot the hemispherical end of a screw 33 in a socket 36 on

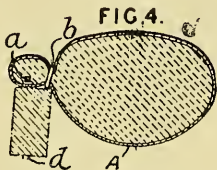
the cover-plate. With this arrangement the vibrator is kept out of contact with the base-plate by means of an oblique prop 27 having rounded smooth ends, fitting recesses in the two parts. The recess in the base-plate is vertically under the pivot pin. The screw bearing is kept in any position to which it is adjusted by means of a notched head 41 and spring catch 42. The sleeve bearing 14 of the

driving-shaft ends in a flexible coupling 16, 17, which contains bevelled gear 19, 20, between the driving-shaft and a shaft 18 to which the flexible shafting from a motor is attached. The driving-shaft gives motion to the vibrator by means of a crank 24 having a ball 26 which works in a slotted socket in the vibrator.

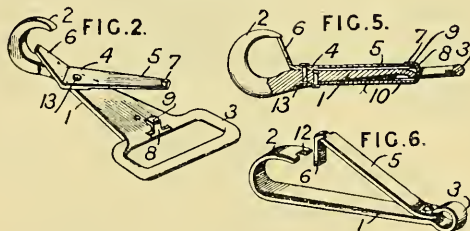
17,816. Imgraben, G. Aug. 17.

Collars, neck.—

Horse - collars are made of a single piece of leather A, the edges of which are united by closing stitches *a* situated in front of a back stitching *b* dividing the roll from the after-wale. The hames *d*, receiving the traces, conceal the stitches *a*.



18,050. Carpenter, A. Aug. 20.

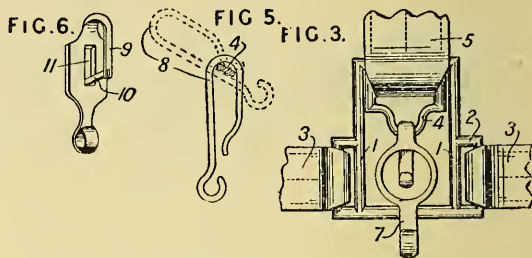


Fastening bridle reins &c. The spring lever 4, Fig. 2, is pivoted on the pin 13 to the shank 1, and is capable of lateral motion to open and shut the hook. The part 6 closes the bill 2, and the spring arm 5 has a lug 7 which engages in a notch in the lip 9 of the catch-piece 8, the bottom of which is rigidly secured in a recess 10 in the underside of the shank 1. Fig. 5 shows a modification in which the catch 8 has an up-and-down spring movement. Fig. 6 shows a further modification in which the catch constitutes the loop 3. The part 6 is inclined downwards and interlocks with the notch 12 in the bill 2.

8,351. Maxwell, H. M. Aug. 25.

Bridles; fastening.—In order that the bit may be most efficiently placed, the metal square on each side of the bridle is elongated as shown in Fig. 3, and the cheek-strap 5, preferably grooved, carries a link 4 supporting a "circle" or other hook 7, to

the lower end of which the bit is attached. The hook 7 can only be detached by turning the link 4 out of its normal position. In a modification shown in Fig. 5, the lower portion of the link 4 is flattened



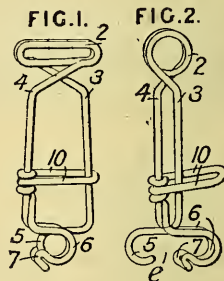
at an angle, and the hook 8 is detached by being turned as indicated. In another modification, shown in Fig. 6, the hook is provided with a tongue 10, pivoted to the arm 9 and resting normally in a slot 11. The tongue can be raised to enable the link 4 to be inserted or withdrawn. The nose-band 3, Fig. 3, is attached to projecting loops 2, or to the sidebars 1, which in this case would be formed with projections to prevent the straps from riding up.

18,565. Sibley, V. D., and Dowsell, R. Aug. 28.

Fastening.—

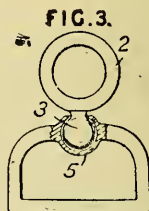
Snap - hooks are made from a single piece of wire. The eye 2 consists of a double coil, either circular or flattened. One end of the wire forms the single hook 5. The other end forms the double hook 6, and the free end is wound around the eye 2 and forms the guide-loop 10.

The end 7 is bent downwards to allow the hook 5 to pass between the arms of the hook 6 and to form an entrance guide to the opening *e*. The hook is opened by pressure on the arms 3, 4.



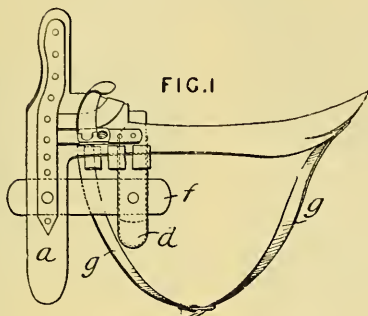
18,592. Evans, W. Aug. 28.

Fastening.—Swivels for harness &c. are cast in two parts. One part has a ball 3, and the other part a socket 5, which, after the ball is placed in position, is loosely closed around the neck of the ball to prevent withdrawal. The ball or the socket may be on either



member. Instead of the closed loop 2, two hook arms may be pivoted to the ball or the socket member.

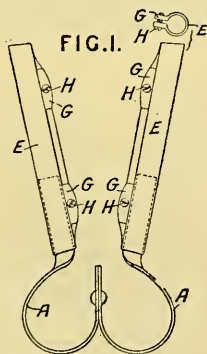
18,870. Richards, J. W. Sept. 1.



Saddles.—To reduce the liability of side saddles to become displaced by reason of the unequal distribution of the rider's weight, the saddle-tree is provided with an additional gullet-piece consisting of a laminated spring extending downwards at each side to form auxiliary points *d*. On the near side, the point *d* and the ordinary point *a* are connected by a metal band *f*. The balance girth *g* is attached to the rear part of the saddle on the near side, and to the front on the off side.

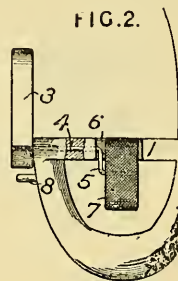
18,901. Crookes, W. H. Sept. 2.

Horse clippers and the like.—Relates to horse clippers &c., having detachable blades mounted on tubular shanks connected by a bow. The bow *A* is formed of two pieces of spring steel carrying tubular continuations fitting in the shanks *E*. Each blade is of sheet steel, a portion being folded over to form the back, while another portion forms a tube fitting in the shank *E*. The lugs *G* and screws *H* hold the parts of the clippers together and also hold the blades in an adjusted position. In a modification, the shanks *E* and bow *A* are made in one piece, but the bow may be in two pieces as described above. The blades may be held in cutting position by bayonet catches on the shanks *E*.

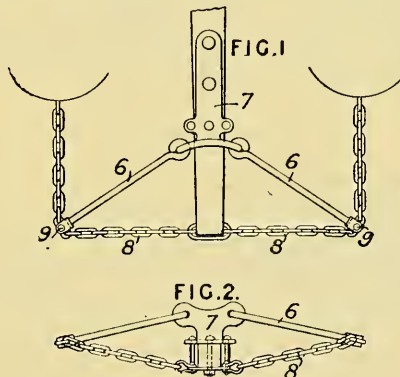


19,153. Nikolaisen, H. Oct. 27, A.D. 1902, [date applied for under Patents Act A.D. 1901].

Stirrups.—A safety stirrup is so constructed that the outer side of its frame becomes opened automatically whenever the pressure of the rider's foot on the footplate is removed, as in the event of the rider being thrown. In a recess in the footplate 1 is pivoted a tread-piece 7, which is connected, by means of a crank 5, with a guard-piece 3 pivoted at the outer side of the frame. So long as the tread-piece 7 is depressed, the guard-piece 3 is raised to close the frame partially as shown, but when the pressure of the foot is removed from the tread-piece, the guard-piece falls and leaves the footplate open.



19,334. Brigg, T. H. Sept. 8.



Fastening pole-chains. The pole-chain attachments described in Specifications No. 18,666, A.D. 1899, No. 22,983, A.D. 1900, and No. 3948, A.D. 1901, are modified by pivoting the strut-pieces 6 to the bracket 7 projecting upwards from the pole, and by connecting the pole-chains 8 to the struts 6 by pins 9 at about the middle so that they are at about right-angles to the pole. The arrangement is such as to prevent the strut-pieces from rising when the horses back.

20,457. Holms, J. Sept. 23.

Fastening hooks for. The two S-shaped parts 1, 2 are pivoted by the pin 4 and are flat on one

side and rounded on the other. The ends 3 are bent as shown and have tapered points which meet, or just cross, when the link is strained, as shown in Fig. 1. When slack, the ends 3 grip the

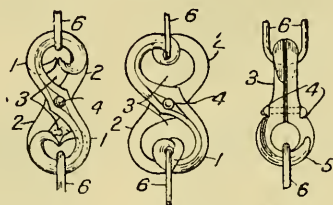


FIG. 1.

FIG. 4.

FIG. 6.

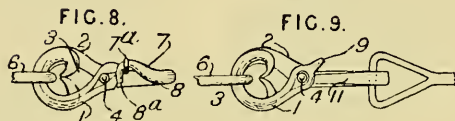
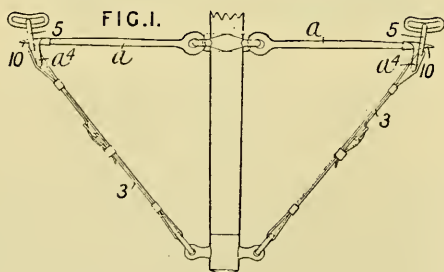


FIG. 8.

FIG. 9.

rings 6 and prevent them from moving towards the pivot. Fig. 6 shows a hook fastening, one half of which is the same as that shown in Figs. 1 and 4, while the other half consists of two hooks 5 forming, when closed, a ring in a plane at right-angles to the upper hooks. Fig. 8 shows a modification, in which the short and long parts 7, 8 engage by their hooked ends 7^a, 8^a. Fig. 9 shows a tug-hook coupling applicable for breeching. The short part 9 acts as a lever to open the hooked ends 1, 2. The part 11 forms a hook the end of which is fixed by the pin 4.

20,967. Brigg, T. H. Sept. 30.



Fastening pole chains and straps. In order to ensure that the carriage-pole spreader arms described in Specifications No. 18,666, A.D. 1899, and No. 22,983, A.D. 1900, shall be kept in their proper working position, the outer ends of the arms are provided with extensions 10, which pass through the ordinary rings 5 and at the sides of the eyes *a*¹ by which the pole-straps 3 are attached. According to the Provisional Specification, the extensions 10, if made circular instead of oblong, serve for use with both pole chains and straps, and, by making them five or six inches long and supporting the arms *a* horizontally, the

pole connections 3 need not be threaded through the loops *a*¹, so that a fallen horse frees himself from the arms.

21,171. Hennessy, G. Oct. 2.

Whips.—A riding whip, more particularly for cavalry use, is divisible into two parts for packing &c., and one of the parts may be made hollow to carry paper, pen, and ink, cigarettes, passes, matches, and other articles. The stock *a* may carry a tapered ferrule *c*, to screw on the hollow handle *b* which forms a receptacle for paper &c. The cap *d*, carrying a box *e* for matches or the like, may be connected to the handle by a bayonet joint, or it may carry pins *g* adapted to engage curved slots in the handle. By twisting the cap, it is detached from the handle, and on opening the spring-held lid *h*, access is obtained to the box. In a modification shown in Fig. 4, the cap is fixed to the handle, but it is cut away for about half its circumference, and this cut away part *k* is hinged to the remainder like a door, and carries the match box. On opening the door, the lid *h* may be released, while at the same time, the contents of the handle may be withdrawn.

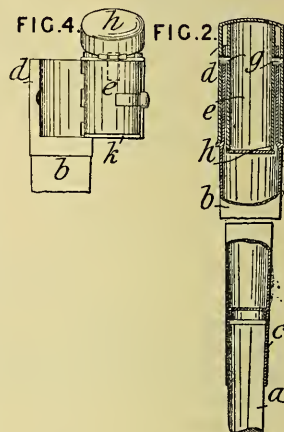


FIG. 4.

FIG. 2.

21,489. Melleby, K. J. Oct. 16, A.D. 1902, [date applied for under Patents Act, A.D. 1901].

Bits.—A snaffle bit is made with the tongue-piece *e* pivoted to the links *a*, which are fastened in the usual manner to the cheeks *b*. The piece *e* is made with a projection *g*, Fig. 2, in the hinge, so as to allow a limited movement only about the pivot *f*.

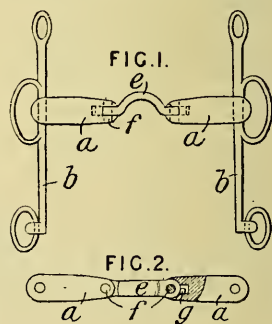
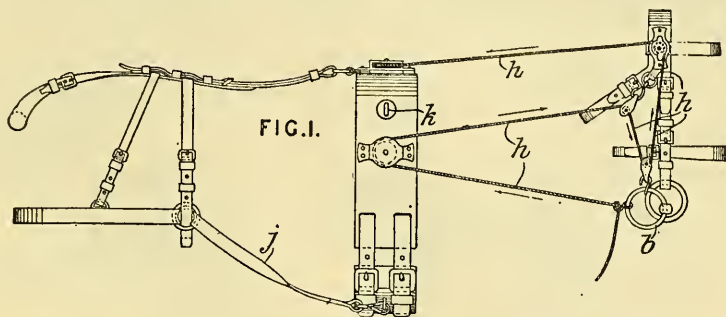


FIG. 1.

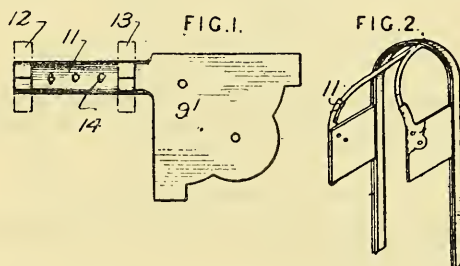
FIG. 2.

22,136. Slack, T. R. Oct. 14.

Horse breaking and training harness.—A cord *h* is fastened to the bit ring *b* on one side and passes round pulleys on the girth and bridle or headstall, as shown, to the bit ring on the other side. The cord is gradually tightened as the animal becomes used to the harness, until the head and neck are carried in the desired position. The breeching is of the usual construction, except that the straps *j* are preferably crossed under the belly of the animal. The girth has rings or loops *k* through which the reins are passed.

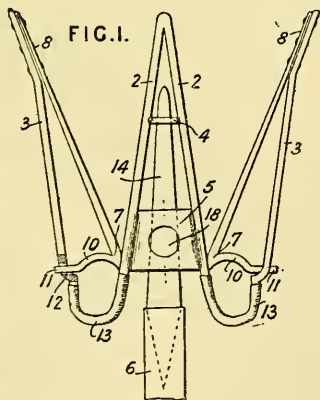
**22,169. Daniels, F. M.** Oct. 14.

Fastening; bridles.—Consists of means for attaching horse blinders to the usual fork strap. A plate *9'* is riveted to the upper corner of the blinder, and has a stem portion *11*, which is bent into a semi-cylindrical form to receive the end of the fork strap, and is provided with ears *12*, *13*, which are bent so as to encircle the strap completely and cause teeth or projections *14* to be forced into it. The device may be used in repairing old forms of hangers or bridles.

**22,890. Orr, J. S.** Oct. 23, A.D. 1902, [date applied for under Patents Act, A.D. 1901].

Catching - appliances for animals.

—Relates to apparatus for catching fowls and other animals, and for holding them so that they can stand naturally. Attached to the side pieces *3* of a frame *2* are movable jaws *7*, provided with guides *11* passing through holes *12*, and normally held in the position shown by springs *8* formed integral with them. When the frame is pushed beneath the body of a fowl, the jaws *7*, coming into contact with the bird's legs, move and allow them to pass into the loops formed by the parts *10*, *13*, and then spring back

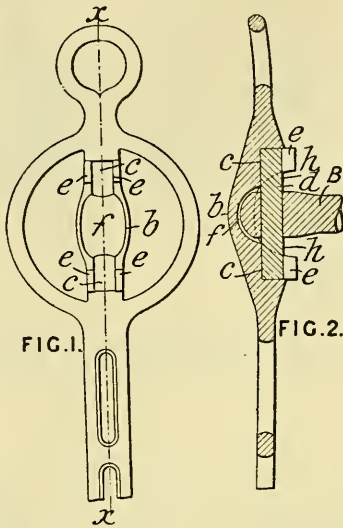


into place and prevent their removal. The appliance is held by a rod *6* carrying a tapered pin *14* which fits into holes in cross-pieces *4*, *5*. Attached to an eye on the cross-piece or double socket *5*, is a string by means of which the fowl may be held after the rod is withdrawn. The apparatus may be adapted to catch fowls in trees &c., by passing the pin *14* through the holes *18*. The parts *10*, *13* are circular in cross-section, and may be provided with an elastic covering. Any other part of the apparatus may be provided with means for preventing the metal from coming into contact with the bird. The frame may be ornamented.

22,915. Wiggin, W. Oct. 23.

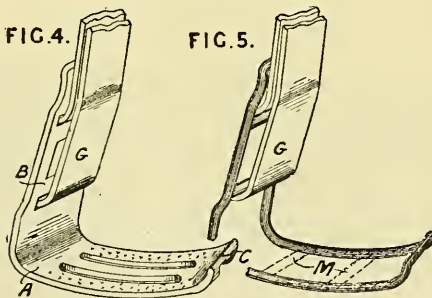
Bits.—The chief object is to connect a sliding mouth-bar of steel or other hard metal to nickel or other soft-metal cheeks, but the method is applicable also to bits with steel or other cheeks. Fig. 2 is a section on the line *x-x*, Fig. 1. The middle bars of the cheeks are preferably made with broad shields *b*, formed with cavities *f* to accommodate the ends of the mouth-bar *B*. The mouth-bar slides on steel pins *d*, the ends of

which are placed in recesses *c* in the cheeks and secured therein by closing flaps *e* round them. The movement of the mouth-bar is limited by



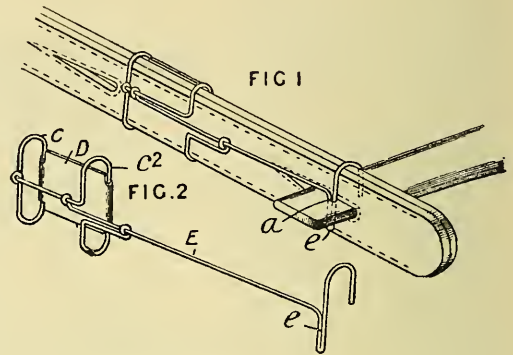
the walls of the cavities *f*, and spaces *h* are left above and below the mouth-bar to prevent pinching of the animal's lips.

23,241. Arundale, F. R., and McNeil, J. Oct. 27.



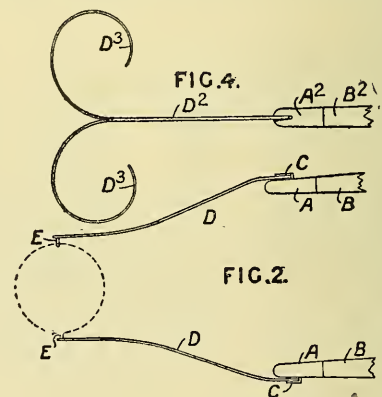
Stirrups.—Stirrup irons have only one side. The foot-plate *A* may be flat, convex, or concave, and is preferably formed with a rounded or wire-edged return end *C*. Its upper surface may be roughened, or faced with resilient material. The upright *B* has slots to take the stirrup leather *G* as shown, the upper part of the upright being curved and bearing against the leather; the stirrup is thus maintained in the correct position. Slots are formed in the foot-plate and upright to reduce the weight. The stirrup iron may consist of a skeleton frame which may be provided with cross-bars *M*, those on the upright serving for the attachment of the stirrup leather.

23,639. Lay, R. J. Nov. 6, A.D. 1902, [date applied for under Patents Act, A.D. 1901].



Fastening.—For connecting traces to swingle-trees or whipple-trees, a fastening made in two pieces *C*, *E* of spring-wire is adjustably placed on the trace with the parts in the relative positions, shown in Fig. 2. The piece *E* is raised to admit the end of the whipple-tree, and, on release, the part *e* passes through a hole *a* in the whipple-tree, and is held and prevented from rising therein by sliding the part *C* forwards to the position shown in Fig. 1, so that the trace is connected to the whipple-tree in an easily-detachable manner. A metal plate *D* connects the loops *c'* of the part *C*, and may also serve as a name plate.

23,705. Robinson, R. Nov. 2.



Nosebags and food-containers.—Nosebags or buckets, for horses to feed or drink from, are supported from the shafts or pole of the vehicle. In the case of a one-horse vehicle, carriers *D*, preferably of steel or aluminium, can be fitted in sockets *C* or caps *A* fixed in the shafts *B*, and are

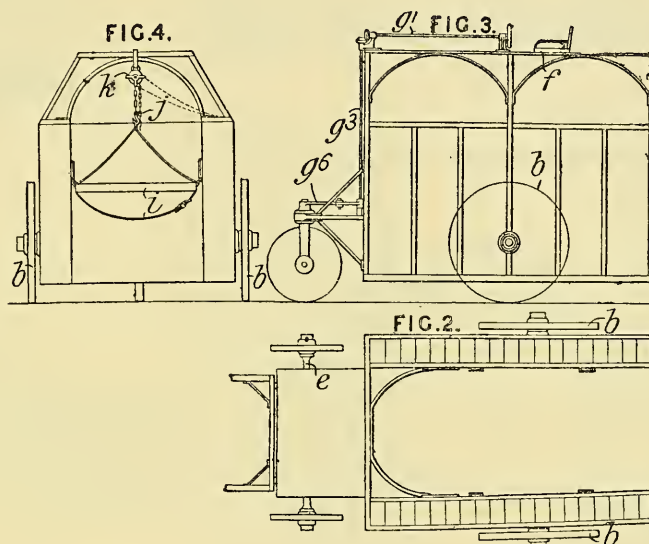
provided with clips, hooks, or the like E to engage rings or loops on the nosebag. If preferred, one carrier only may be used; its forward end would then be curved as at D³, Fig. 4. When not in use, the carrier may be removed from the socket and

buckled or otherwise secured to the shaft. Two-horse vehicles have a cap A² fixed on the pole B², and the carrier D² is formed with curved branches D³ to hold the nosebags. Or a single carrier may be fitted in a socket on each side of the cap A².

23,758. Aylett, G. H. Nov. 2.

Training and breaking-in horses; animals, stocks and like appliances for holding.—In breaking-in and training a horse, the animal is secured in a carriage which has no bottom, so that it walks upon the ground, and means are provided for raising the animal from the ground in the event of its becoming restive, or for medical purposes.

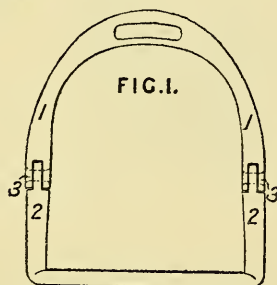
For the first stage of the training, the horse is secured in a carriage, Fig. 2, adapted to be drawn by another horse or a motor. This vehicle is fitted with a fore-carriage *e*, and its side wheels *b* are mounted upon short axles. For the second stage, a carriage, Fig. 3, intended to be propelled by the animal under training, is employed, the animal being controlled by reins in the ordinary way. This carriage can be steered from the driver's seat *f* by means of gearing *g*¹, *g*³, *g*⁶. The second carriage can be derived from the first, which would then be made with detachable sides. The means for slinging the animal comprise a frame *i* in which it is confined, and which is connected to lifting-tackle *k* by a chain *j*. To improve the knee action



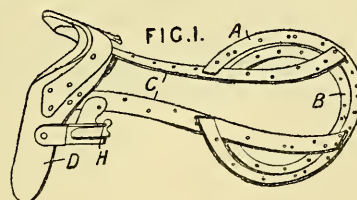
of the animal, the carriages may be used on a track with transverse slats or sleepers between which the animal must tread as the carriage is drawn along. According to the Provisional Specification, the fore part of the sides of the carriage can be opened after the earlier stages of the training, so that the animal can see the passing traffic, and the carriage used in the final stage is in the form of a framework only.

23,985. Scott, L. K. Nov. 5.

Stirrups.—A stirrup is formed in two parts 1, 2 hinged together on pins 3, to facilitate mounting, to render riding more comfortable, and to allow the rider to free his foot when thrown.



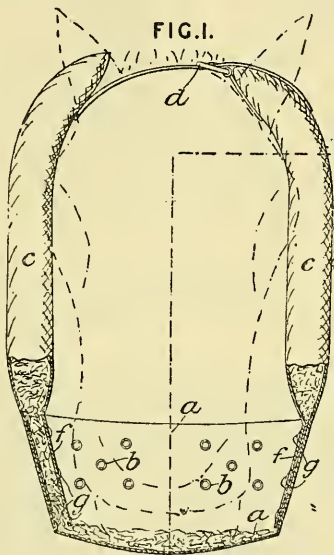
24,919. Lappan, A. Nov. 16.



Saddles.—The saddle-trees of riding-saddles have a wooden pommel D, strengthened above and below by metal plates and connected by side bars C to the cantle. The cantle comprises two curved

iron plates A, B riveted to the side bars. The stirrup loops H are riveted to the wooden part D and to the side bars. Webbing is stretched between the pommel and cantle, and interlaced transversely with webbing stitched to the side bars. The bars C and plates A, B are perforated to accommodate the stitching. Panel packing is stitched to the webbing, and the pad is wrapped over the edges of the tree and secured by riveting and stitching. The pads have moulded leather cases which, while in the mould, are lined with felt and packed tightly with pieces of waste leather, which have been soaked to soften them and then impregnated with a cementing-substance.

25,240. Patterson, J. H. Nov. 19.

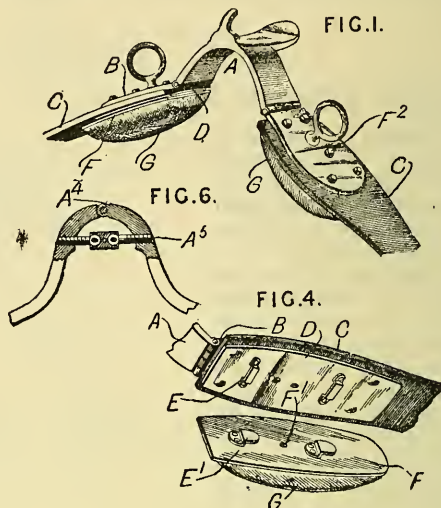


Nosebags.—The food or water is carried in two or more tubes *c*, connected to a canvas or other nosebag *a* having ventilating-holes *b*. Flaps *f*, through which the tubes are filled, can be fastened down, as shown at the right-hand side of Fig. 1, by means of spring fastenings *g* or otherwise, to prevent the passage of the food from the tubes, or can be opened, as at the left-hand side of the Figure, to admit the food to the nosebag. The bag may be fastened to the horse's head by a strap and buckle *d*.

25,366. Morrish, T. I. Nov. 20.

Saddles; pads for.—Harness saddles are made adjustable to different backs by bolting the strap C, Figs. 1 and 4, between two plates D, B to the

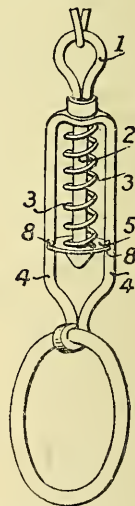
upper of which is hinged the yoke piece A. The lower plate has two clips E to engage with tongues E' on the back of the pad G. A bolt F' passes through the strap and plates, and engages with the



threaded hole F' in, or with a nut on the inside of, the pad plate F. By tightening this bolt, the pad plate is slightly bent to fit the back. The plates B may be hinged together, without the yoke, as shown at A', Fig. 6, and an adjusting-screw A' may be provided.

25,504. Becker, W. Nov. 23.

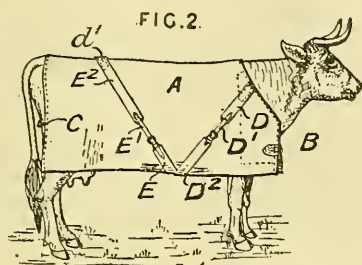
Halters.—In a combined spring link and swivel for use with a halter, the spring 3 encircles the pin 2 of the swivel-link 1. The pin 2 passes loosely through the end of the link 4 and through the plate 5, which has guiding-grooves 8. The spring 3 may be replaced by another elastic device, such as an india-rubber ball.



25,564. Oaten, J. Nov. 23.

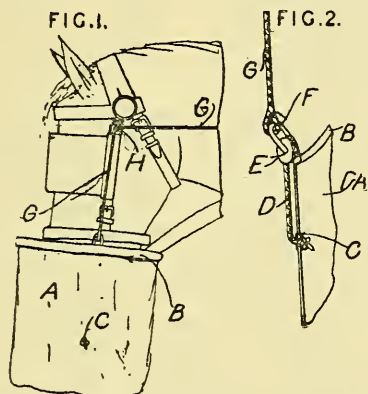
Clothing for animals; fastening.—The rug A is fitted with a strap and buckle B, and may have a

breaching C. Bands of webbing or other material D, E are fastened by riveting or sewing at each side of the neck, and the pieces D², E² are similarly

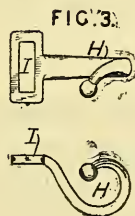


fastened at the point d¹. The bands are fastened by straps D¹, E¹ and buckles.

25,941. Bligh, M. V. Nov. 27.



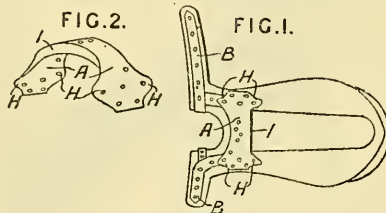
Nosebags.—The upper part of the bag is lowered when the horse lowers its head to take food. The canvas or other bag A is bound round the top with a stiff cord B. Cords D are fastened by knots on the outside of the bag, and pass through eyelets C, up the inside of the bag, and over pulleys E, being then fastened at the top of the bag. A cord G is attached to rings F on the pulleys, and carried through hooks H to the rein hook on the saddle. The hooks are formed with slots I through which the bridle straps pass. When the corn is low, the pressure of the blinkers on the top of the bag causes it to move down and up with the horse's head.



26,619. Woollatt, T. L. Dec. 5.

Saddles.—The steel gullet A of a side saddle is made separately and riveted to straps B secured to the saddle-tree, as shown in the underside view

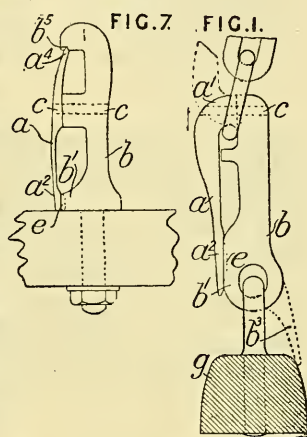
Fig. 1. The gullet is thickened towards the edge I, and may be formed with flanges H. It may be



tinned, lacquered, japanned, painted, or otherwise coated.

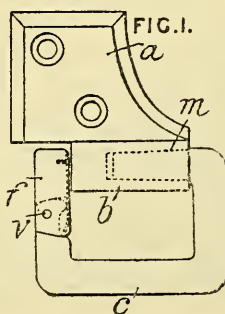
26,921. Trimmer, J. Dec. 9.

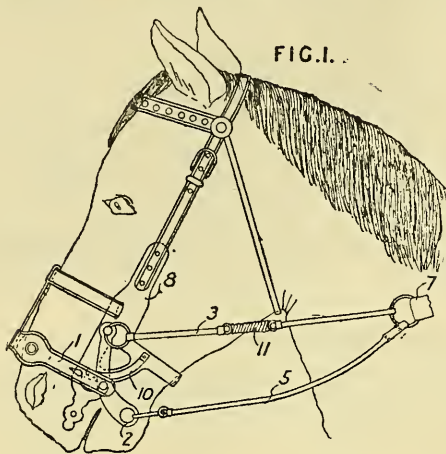
Fastening.—A slip-hook for attaching back-bands of saddles to shafts, for girths, poles, traces, and harness in general consists of a shank b, Fig. 1, to which is pivoted at c the swivelling member a, the springy end a² of which has a projection engaging the recess e of the eyeleted boss b¹. Instead of the spring end, a sliding ring may be employed to keep the hook closed. The joint at e may be made by omitting the pin and carrying the bent-over end a¹ of the member a through the hole in the enlarged end of the shank b, and a tail-piece b² may be provided to bear on the shaft g to keep the hook away from the side of a fallen horse. In another form, shown in Fig. 7 as used for connecting the traces and cross-bar, the member a is pivoted centrally, and the end a⁴ engages a slot b⁵ in the end of the shank.



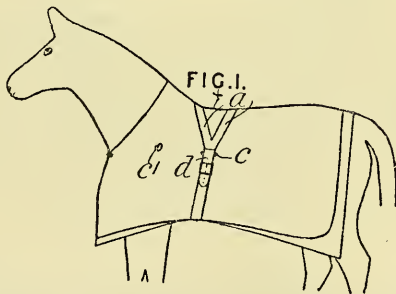
26,991. Martin, J. Dec. 22, A.D. 1902, [date applied for under Patents Act, A.D. 1901].

Stirrup straps, suspending, safety saddle-bars for. A releasing stirrup bar c is connected to a plate a on the saddle by a conical pin m in the socket b, and a spring catch f pivoted at v. When the rider falls, the catch is forced back, and the buckle or fastening comes away from the plate a.



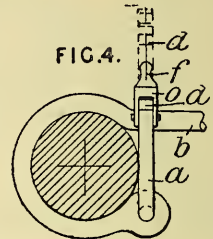
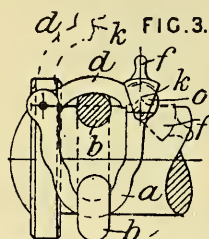
27,570. **Nilsson, J. S. P.** Dec. 16.

Bridles.—In bridles without bits, the horse is guided by means of the noseband. The noseband 1 is attached to levers 2 pivoted to the straps 8. The levers 2 are connected to the reins 7 by bands 3, 5 respectively, a spiral spring 11 being inserted in the band 3. Normally, the reins only operate the bands 3, which extend and moderately tighten the noseband. On drawing the rein more strongly, the bands 5 are also operated, and the noseband is strongly tightened through the levers 2, which have projections working in guides 10.

27,672. **Horne, G.** Dec. 17.

Clothing for animals.—A reversible top rug and an under-blanket are secured by a roller and a breast girth. The upper part of the roller *a* is made V-shaped, and is stitched to the rug down to the eyelets *c*, so as to reduce the pressure on those parts of the horse's back affected by the saddle. The upper part of the breast girth is similarly shaped, and is attached to the inside of the rug and passed through the eyelets *c* in the under-blanket. The lower parts of the roller and of the breast girth are buckled on the near side to leather straps *d* sewn to their V-shaped upper parts, and on the offside are run through D-buckles fitted with half-bars to enable the straps to be adjusted. The top rug may be reversed for night wear, the

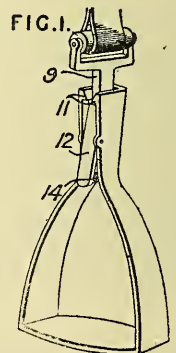
buckle ends of the rollers and breast girth being pushed through the eyelets *c* and secured by running loops.

27,809. **Berkes, J., and Brief, M.** Dec. 18.

Fastening.—Traces are attached to vehicles by passing them round the single-tree, the end of the trace being provided with a fastening which encloses an adjacent portion of the trace. The fastening consists of a loop or buckle *a*, Fig. 1, to which is pivoted a bar *g* provided with a sleeve *j*. The sleeve *j* is fixed longitudinally on the bar *g*, but is free to rotate, and has a slotted end *l* which engages with a projection *e* on the loop. The projection *e* is held or released according as the sleeve is rotated. To fasten the trace, the bar *g* is brought down over the portion *b*, and the sleeve is rotated into engagement by a handle. In the construction shown in Figs. 3 and 4 for attaching circular traces, the connecting-bar *d* is provided with a recess *k* corresponding to a projection on the loop *a*; it is secured over the trace by a pivoted sector *o* provided with a handle *f*.

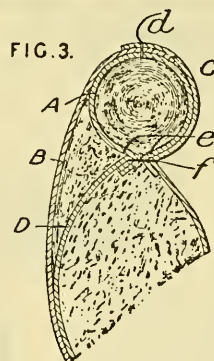
27,927. **Heermann, H. H.** Dec. 19.

Stirrups.—In a safety stirrup, the shank 9, Fig. 1, hung from the strap, has formed on it shoulders which engage with shoulders 11 formed in the three-sided socket which composes the neck of the foot loop. These shoulders are deeper than those on the shank to prevent the latter from accidentally jerking out, and a detent 12, held by a spring 14, is fitted to keep the shank in position. A blade or other spring attached to the socket and bearing against the shank may also be used.



28,369. Loveday, T., and Loveday, W. G., [*trading as Loveday & Sons, R.*]. Dec. 24.

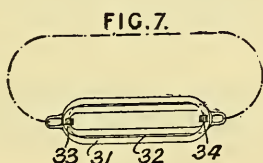
Collars, neck.—In the manufacture of "double-lined" horse collars, the forward edge of the outer basil body B and the front of the prince's band C are sewn through, as shown at *d*, to the fore-wale leather A before the same is stuffed. The flaps *e* are now sewn together to form the sleeve or pocket for the stuffing, and, by the same stitching *f*, the prince's band is sewn to the fore-wale leather. The inner body D may also be simultaneously sewn to the leather. Collars constructed as described in Specification No. 15,533, A.D. 1903, may be made in this manner.



A.D. 1904.

423. Wilcox, T., [*trading as Wilcox & Son, M.*]. Jan. 7.

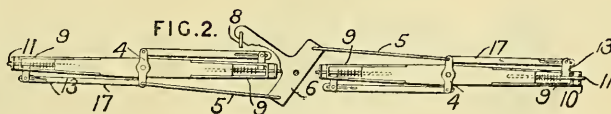
Dog collars; fastening.—A fastening applicable for dog collars and harness consists of two links, one 32 of less diameter than the other 31, each link having an



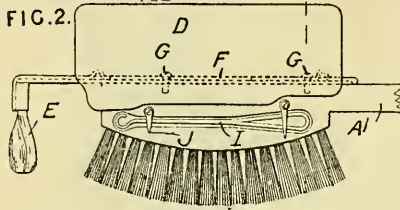
outwardly-turned hook 33, 34 on its end, so that, when the smaller link is passed through the larger, each hook can engage with the other and hold the parts against tensional strain. Where adjustment is required, more than one large or small link may be attached to one end of the article to be fastened, only one of the other size being employed on the other end. The links may be varied in shape, may be ornamented, or may be flat or curved as desired.

558. Pearson, J. Jan. 8.

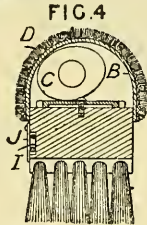
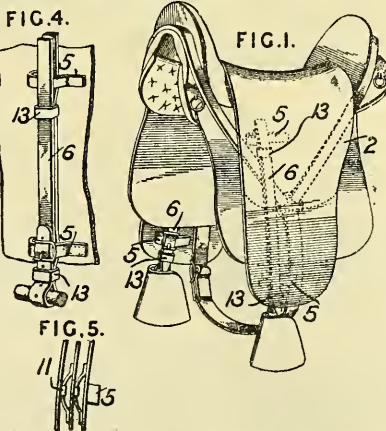
Fastening.—In a device for detaching horses from vehicles, the traces are released by operating a rod 8 extending from the whipple-tree to the vehicle. Fig. 2 shows a view from below, the whipple-tree being removed. The single-trees are provided with casings 9, in which are mounted spring-pressed plungers 11 normally engaging angular extensions 10, while the plungers are connected by ears 13 to slotted rods 17 pivoted to levers 4. To secure the traces, the ears 13 are pressed in by



hand, the traces inserted in the extensions 10, and the plungers released. To detach the traces, the rod 8 is pressed forwards, so that, through the lever 6 and the rods 5, 17, the ears 13 are moved and the plungers retracted from the extensions.

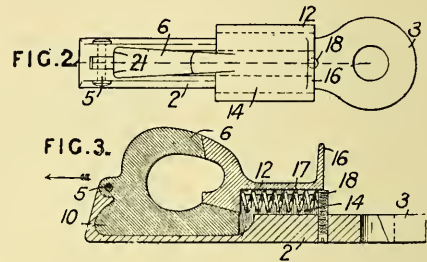
677. Brawn, C. Jan. 11.

Cleaning and polishing apparatus for.—For cleaning and polishing harness, metal goods, and other articles, the back of a brush is fitted with a thin sheet-metal, mill-board, &c. sheath B, of preferably semi-circular section and covered with plush, velveteen, or other fabric to form a polishing-pad D. The outer end of the sheath B is closed, while the inner end is left open so that polishing-material, which is contained in a collapsible tube C, loose leathers, rubbers, or rags, may be placed in the sheath B when not in use. The polishing-material is distributed over any particular surface by a pad E, which is carried at the forward end of a plate F, adapted to slide on the back of the brush through a distance limited by screws G, so that, when in its forward position, the pad distributes the polish over the surface being cleaned, without the brush coming into contact therewith, and, when in its retracted position, it is clear of the surface. The sliding polishing-pad may be applied to a brush which is not fitted with the sheath B and has no operating-handle such as A'. A recess is formed in the side of the stock of the brush to receive a button-hook I, which, when not in use, is held in place by pivoted catches J.

**729. Brooke, T. V. Jan. 11.**

Saddles.—Riding-saddles are provided with a

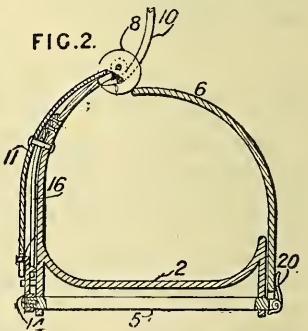
cover 2 which passes over the seat and is free to move on the saddle to a limited extent both longitudinally and transversely. Loops 5 are secured to the underside of the cover through which pass the stirrup straps 6. The transverse movement of the cover is limited by the loops coming into contact with sleeves or collars 13 on the strap, or otherwise, and the loops are made long enough to permit of the required longitudinal movement. In a modification, the cover consists of several layers attached loosely to each other by loops 11, the innermost layer being secured to the saddle as above.

1276. Letts, T. Jan. 18.

Fastening.—Relates to hooks attached to the shafts or other parts of vehicles and used for fastening traces, chains, &c., and facilitating release of fallen horses. The base-plate 2 is provided with an eye-piece 3, Figs. 2 and 3. A hook-shaped piece 6 is pivoted at 5, or it may be loose with or without trunnions formed upon it. A lug 10 and shoulders take the strain from the hinge. The piece 12, with thumb-piece 16, slides upon dovetail or other lugs 14 and closes the hook 6. The spring 17 bears against the piece 12 and the screw 18.

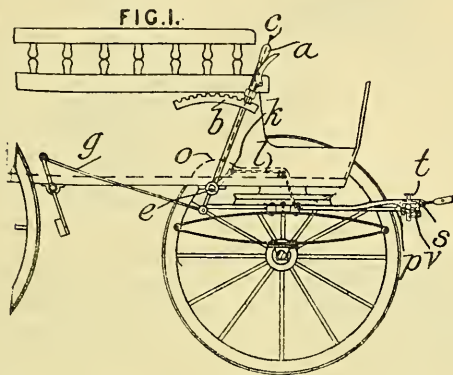
1299. Ward, W. L. Jan. 16, A.D. 1903, [date applied for under Patents Act, A.D. 1901].

Stirrups.—Safety stirrups are made with a rocking shaft 5, Fig. 2, carried in bearings in the tread 2, and carrying at its inner end a lever 14 held in position by a split spring 16 and adapted to actuate a bent lever 11 pivoted to the arm of the stirrup. This lever normally acts as a catch to hold in position an eccentric disc 8 slotted to receive the suspending-ring 10. The rocking



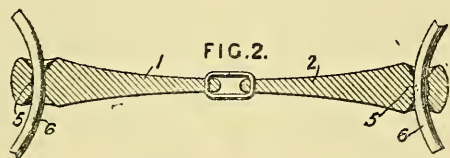
shaft carries at the outer end a lever 6 forming the outside of the stirrup and held up by a spring 20. On the foot pressing the lever 6, the upper end of the lever 11 moves sideways out of the slot in the disc 8, which then turns and sets free the ring 10; sideways pressure opens the side 6 against the spring 20.

1576. Sauerbier, H. Jan. 21.



Fastening; runaway horses, releasing.—A brake for carriages and other road vehicles is combined with a device for releasing runaway horses. The lever *a* turning freely on a cross-shaft *e* applies the brake through a rod *g* and is held in position by a rack *b*. Within or parallel to the lever *a* is a rod *c*, normally held by a spring but adapted to be pressed down to engage a toothed wheel on the shaft, which, if the lever *a* be now actuated, is turned and, through an arm *k* and a rope or chain *l*, retracts a forked grip or claw *p*, thus releasing the whipple-tree. The claw moves back in a guide, while the whipple-tree, now capable of rotating in its bearings *s*, is turned forwards. Pins *t* for the loops of the traces, being thus disengaged from springs *v*, are drawn out by the pull, and the animal is released. A guard *o* may be provided for the lever *k* and other parts of the device. A spring prevents the grip from sliding out of engagement with the whipple-tree under shock.

1885. Cummings, H. A., and Johnson, P. Jan. 25.



Bits.—A bit adapted for race horses and for controlling restive horses without injuring their mouths, comprises two bars 1, 2, loosely connected by an S-shaped oval link and having apertures 5

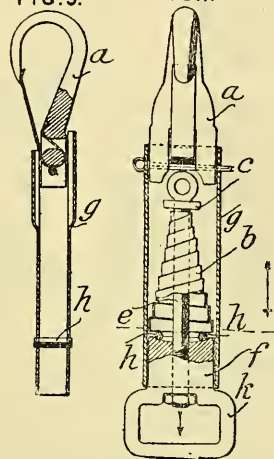
to take the rein rings 6. The apertures are curved lengthwise to conform to the curvature of the rings, and their ends are enlarged to allow the rings to move freely.

1942. Koch, H. Jan. 26.

Fastening.—Driving or riding reins, and traces, are provided with a spring attachment, so that any pull on them will be transmitted gradually. The attachment comprises a slip-hook *a*; a buffer spring *b*, supported by bearing-pins *h* in a sleeve *g*; a draw-bar *e*, provided with a flange *c*; and a guide plunger *f*, connected to the draw-bar *e*, and having an eyelet *k* which is attached to the rein or trace.

FIG. 3.

FIG. 1.

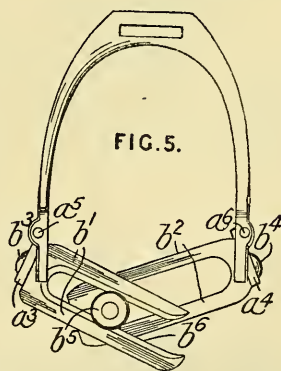


When, for example, the reins are suddenly pulled, the plunger *f* is drawn outwards, and the flange *c* compresses the spring *b*. The restoring action of the spring is retarded by the plunger compressing the air in the sleeve. The sleeve is preferably made oval in section, the plunger guide and flange being shaped to correspond.

2389. Rock, J., and Hickin, T. Feb. 1.

Stirrups.—The tread of a safety stirrup consists of two parts, *b*¹, *b*², pivoted to tongues *a*³, *a*⁴ respectively, which tongues are hinged at *a*⁵, *a*⁶ in inclined slots at the bottom of each side of the bow. The parts *b*¹, *b*² normally overlap with their planes horizontal, but, should the rider fall, they will turn on the pivots *b*³, *b*⁴ into a vertical position.

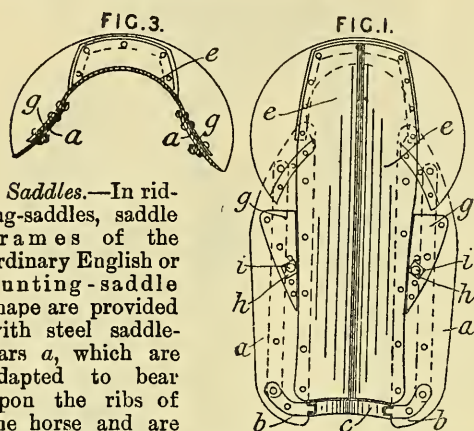
FIG. 5.



The weight of the rider will then cause a stud *b*⁵ on one part of the tread to be pulled out of a slot *b*⁶ in the other part, the tongues *a*³, *a*⁴ turning on their pivots, as shown in Fig. 5, so that the foot will be released. A stop

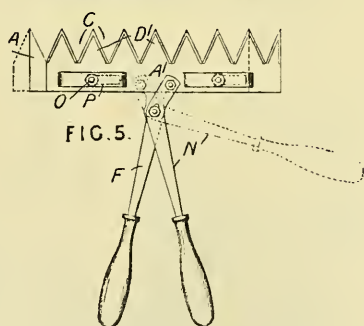
at one side of the bow prevents the tread from turning outwardly while the stirrup is in use.

2825. Knetsch, G. Feb. 4.



Saddles.—In riding-saddles, saddle frames of the ordinary English or hunting-saddle shape are provided with steel saddle-bars *a*, which are adapted to bear upon the ribs of the horse and are provided at the front end with a rounded off portion *b* to prevent the horse's shoulders from chafing. The front bow or fork *c* is hinged or otherwise movably attached to the saddle-bars. The seat leather *e* is riveted or bolted to the saddle-bars. It is previously beaten into shape, and rendered impervious to sweat, rain, &c., which gives it permanent elasticity. The saddle flaps are attached over the saddle-bars. Each flap is secured between the saddle-bar and a plate *g*, which are held together by a bolt *i* having a countersunk nut *h*.

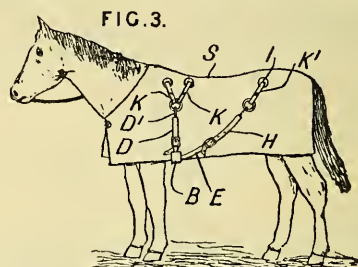
3004. Napper, H. D. Feb. 6.



Horse clippers and the like.—Shears for clipping hedges &c. are made of rectangular plates *A*, *A'* having V-shaped divisions *C* and inclined and oppositely bevelled edges *D'*, the plates sliding over each other during the operation of cutting. The plate *A* has an extension or arm *F* slotted to receive a bolt, on which the arm *N* bolted to the

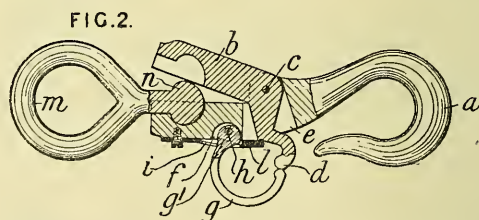
plate *A'* is pivoted. Bolts &c. *O* pass through holes in the plate *A* and work in slots shown in dotted lines in the plate *A'*. The slots are covered over by plates *P*.

3698. Fiske, A. J. Feb. 13.



Clothing for animals.—Horse and cattle rugs are secured by adjustable body straps *H* attached to straps *K'* secured at *I* and to the ends of a V-shaped piece *E* of webbing secured to the bellyband *B*. The bellyband is attached, by clips *D'* or buckles, to rings at the junction of the straps *K*, and is fitted with a lengthening-strap *D* at one or both sides. The straps *K, K'* may be extended to the central seam *S* running along the back.

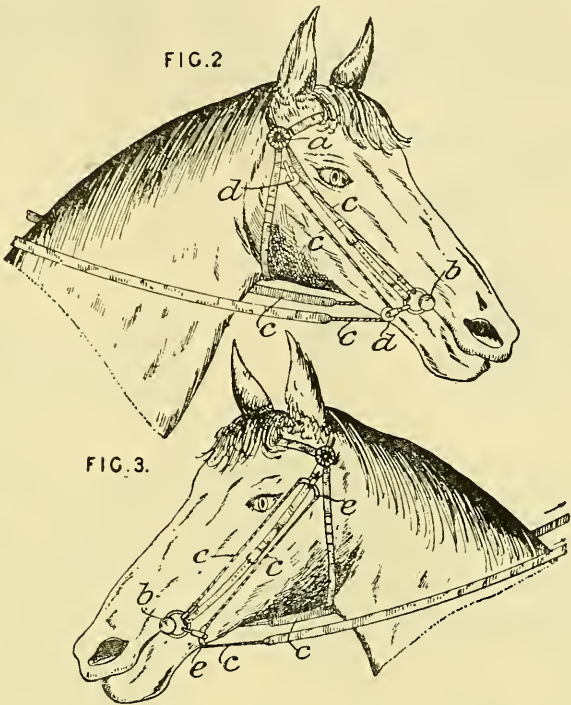
3972. Witkugel, F., and Welter, W. Feb. 17.



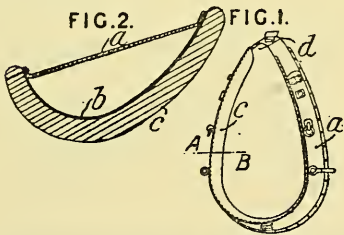
Fastening.—A draught-hook which can be easily released from the tug consists of the parts *a*, *b*, which are recessed so as to embrace the head *n* of the ring *m*. The part *b* is pivoted on the bolt *c* and its end *d* projects through the hole *e* on the part *a*. The curved lever *g* is pivoted in the recess *f*, and projects through an opening in the plate *i*, which is attached by the screw *h* and forms a spring blade. When the hook is fastened, the wedge-shaped end *l* of the spring *i* lies in the opening *e*, and the end of the lever *g* engages the hook *d*. When the lever *g* is disengaged from the hook *d*, the thickened end *g'* depresses the spring *i*, allowing the part *b* to be raised as shown in the Figure.

5222. Schumann, A. March 2.

Bridles.—Reins *c*, Fig. 2, connected to a snaffle *b* are passed round pulleys or slide-ways *d* attached to the head-piece *a* and to the snaffle. Levers *e*, Fig. 3, may be used instead of pulleys.



5453. Leinen, F. March 5.

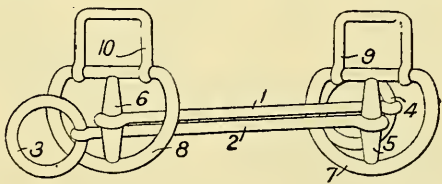


Collars, neck.—The hame is made of a resilient nature, in order to lessen the shock upon the animal in starting. Fig. 2 is a section at A B, Fig. 1, showing the hollow structure of the body; the sides *a*, *b* are of sheet steel &c. connected at the edges; padding is provided at *c* to protect the animal. The inner wall *b* may be built up in segments. The invention is equally applicable to two-part, hinged, or adjustable hames. In the last-named, the sides are preferably in sections adjustably secured to each other. The inner wall and padding are not continued to the point of the hame, a recess *d* being left to receive the animal's mane.

5507. Andresen, J. P. March 7.

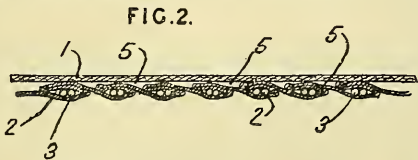
Bits; stopping and controlling runaway animals.—Bits are arranged so that, by a pull at the bridle,

the horse is forced to keep its mouth open, and is thereby checked from running away. In use, the bridle ends are fastened to rings 3, 4 at the ends of



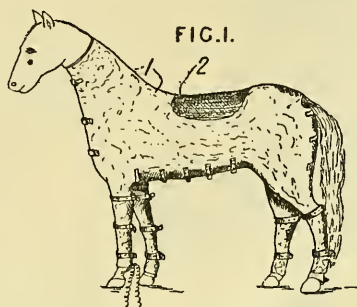
crossing mouthpieces 1, 2, and the cheek strap is drawn through the bows 9, 10; then, by a strong pull at the bridle, the bits change their relative position so that gags 5, 6 and rings 7, 8 are forced into the animal's mouth.

5572. Foglesong, I. J. March 7.



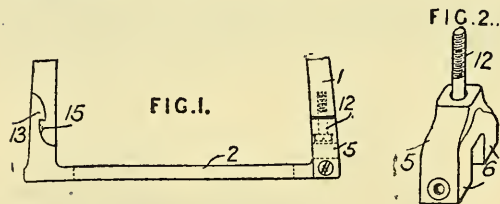
Clothing for animals.—A blanket designed to

promote sweating for medical purposes is shown in use in Fig. 1. It consists of an outer cover of asbestos, or other suitable non-conducting material 1, with a lining of canvas &c. 2, folded and stitched,



as shown in Fig. 2, to form a series of pockets throughout the whole lining. The lining is secured to the cover by stitching. The open spaces 5 between the two layers admits of thorough airing when desired. An insulated wire 3 is threaded through each of these pockets, and its free ends are to be connected to a suitable electric supply. Straps &c. are arranged for fastening the blanket about the animal.

6102. **Sax, M., and Breustedt, W.** March 12

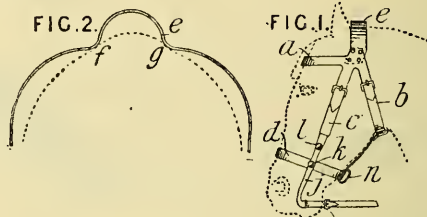


Stirrups, safety. The footplate 2 is hinged between the arms 6 of a piece 5, which can turn about a screw 12 by which it is attached to one leg of the bow 1. The free end of the footplate is formed with a catch 13 and a stud 15, which engage recesses in the other leg of the bow and are withdrawn therefrom by the side pull of the rider's foot in the event of his falling.

6310. **Udhaug, H. J.** March 16, A.D. 1903, [date applied for under Patents Act, A.D. 1901].

Bridles and halters.—A bridle for controlling horses or other animals without a bit is constructed with a stiff head-band *e*, formed so as to bear on the head at two points *f, g*, Fig. 2, a stiff nose-band *d*, and ordinary brow, cheek, and neck straps *a, c, b*. The reins are connected to levers *j*, which are pivoted to studs *k* on the noseband and connected to the cheek straps at *l* so that, on

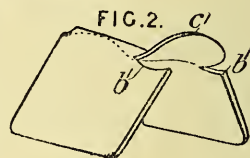
pulling either rein, the corresponding cheek strap is tightened, and the bands *e, d* pressed on the



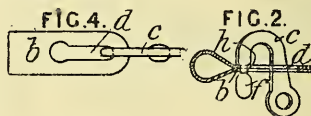
head and nose respectively. To use the bridle as a halter, a chain or cord is attached to a ring *n* on the band *d*.

6343. **Stanley, F.** March 16.

Saddles for gig or cab horses. The seat and skirts of the saddle are formed from a single piece of leather or leather substitute. Incisions are made at *b'* to enable the cantle end of the seat to be turned up as at *c'*. The shaped leather is applied to the tree as usual, or a back cantle may first be fitted to it.

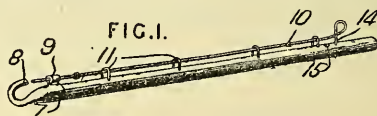


6443. **Bergdolt, L. F.** March 16.



Fastening.—A draw-hook for harness and the like is secured by passing the cylindrical projection *f* vertically through the hole *b*. The reduced part *h* then allows the hook to be moved longitudinally till it reaches the end of the slot *d*, when the hook may be turned down so that the flat portion *c* rests in the slot.

6497. **Seifert, H. O.** March 17.



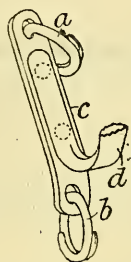
Animal leaders.—Cattle are led by a pole detachably secured to a ring through the nose. The pole

has a hook 7 with a recessed end 8 in which a bolt 9 slides when operated by the pliant rod 10. The rod end is bent to form a pin 14, which engages a recess 15, and prevents the bolt from sliding out of engagement. Staples 11 act as confining-guides.

6783. Collins, A. March 21.

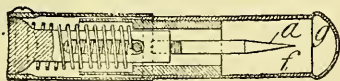
Suspending arrangements for.—

The back-plate C of a hook for suspending horse collars, harness, and the like has two split rings a, b by means of which the hook is attached to a bail chain in any convenient position.

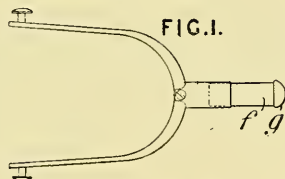


7060. Templer, J. L. B. March 23.

FIG. 2.



Spurs.—Spurs are so constructed that the effective length of the rowel or barb can be varied. The construction also provides against accidental application of the spur, and for the interchange of the rowel or barb for another of different size or shape. The barb a is enclosed by a sleeve f terminating in a perforated cap g. Normally, the sleeve is pressed out by a spring, as shown in Fig. 2. When the spur is applied, the sleeve moves inwards under the pressure, until the point of the barb protrudes through the perforation. The sleeve is adjustable, to vary the extent of the protrusion, and its shape will depend upon whether a barb or a rowel is employed.



7215. Pope, C. L. March 25.

Fastening; yokes, neck.—A device for fastening the clip band 6 of a trace attachment to a whipple-tree &c. consists of a spring key-bar 9 having a dowel pin c and flanged ends b. The flanged ends engage notches in the end of the band. Clip bands upon a neck yoke or spreader bar, or at the end of a wagon pole, are secured in the same way.

(For Figures see next column.)

7215.

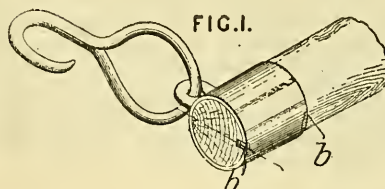
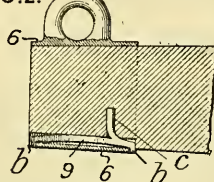


FIG. 2.



7280. Russell, R. A. C., and Russell, A. C. March 26.

FIG. 13.

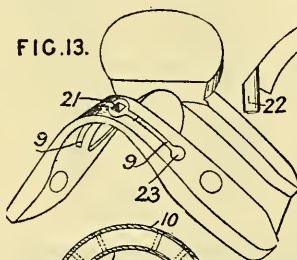


FIG. 15.

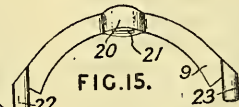


FIG. 1.

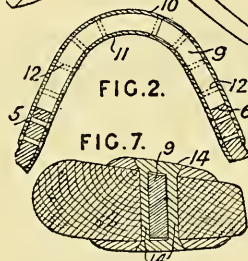
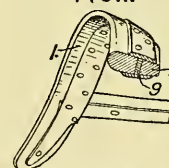


FIG. 2.

FIG. 7.

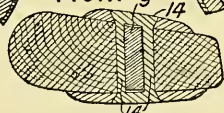


FIG. 6.

FIG. 11.

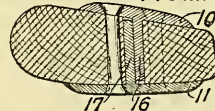
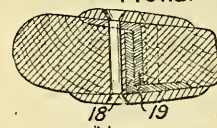


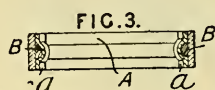
FIG. 12.



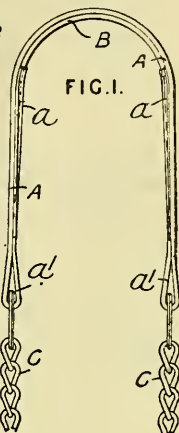
Saddles.—The wooden arch 1, Fig. 1, of a saddle-tree is strengthened by inserting an arched steel plate 9, of greater depth than thickness, in a groove cut therein from points 5 to 6, Fig. 2. The piece 9 is held in place by the ordinary top and gullet plates 10, 11 respectively, which are fixed by rivets 12. In a modification, the rivets 14, Fig. 7, have slots formed in them through which the piece 9 passes; or, again, they may consist of projections 13, Fig. 6, formed on the arch 9. In other modifications, the arch 9 is formed in one piece, with either of the plates 10 or 11; or consists of two pieces 16, 17, Fig. 11, one of which is formed in one with the plate 10, and the other in one with the plate 11; while in Fig. 12 the strengthening-piece is shown formed of angle-irons 18, 19. The

invention, as applied to gig and other driving-saddles, is shown in Fig. 13, where the arch 9 has a central boss 20, Fig. 15, in which a square hole 21 is formed to receive the shank of the pedestal. The ends 22, 23 of the piece 9 are enlarged as shown to prevent the sides of the tree from springing apart. In another modification, the arch 9 is made to extend only partly through the wood of the saddle-tree.

7495. Garner, J. March 29.

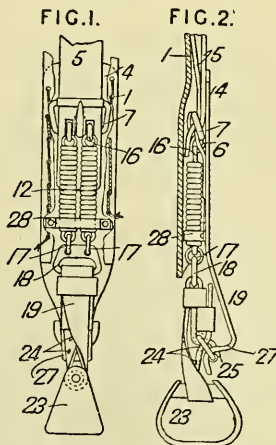


Bridles; stopping or controlling runaway or restive animals.—A nose-band for controlling runaway or restive horses consists of a leather strap A, Figs. 1 and 3, with looped ends a' , and with a U-shaped metal spring B which is placed as shown and has its ends covered with leather pieces a . The curb chains C are connected to the loops a' and to each side of the bit hook or bridle, being crossed under the horse's jaw.



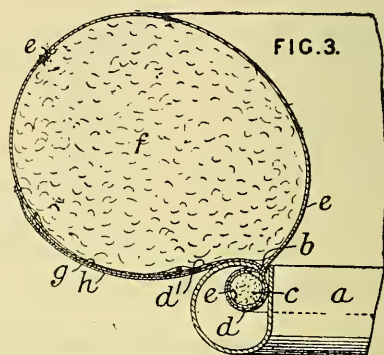
7707. Dowell, J. B. April 4, A.D. 1903, [date applied for under Patents Act, A.D. 1901].

Stirrup straps, elastic. A strap or apron 4, Figs. 1 and 2, is laced or otherwise fastened to the projecting fender 1 of the saddle, so that the appliance is protected from the weather. A strap 5, which hangs from the saddle-tree, is attached to the strap 4, so as to form a loop 6 for the reception of the buckle frame 7, to which the supporting-rings 16 of the springs 12 are attached. A guide 28 prevents lateral displacement of the springs, which are fastened, by the



rings 17, to a D-shaped piece 18, through which is passed the strap 19 supporting the stirrup 23. The free end 24 of the strap 19 has perforations to engage the tongue 25 of a buckle frame, thus admitting of adjustment to the 'reach' of the rider. The tongue 25 also engages holes in the piece 27, which is a continuation of the strap 4. By this means the limit of extension of the springs is fixed.

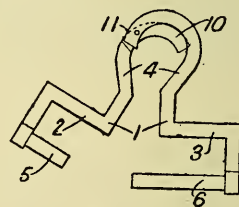
7759. Powell, E. C. April 2.



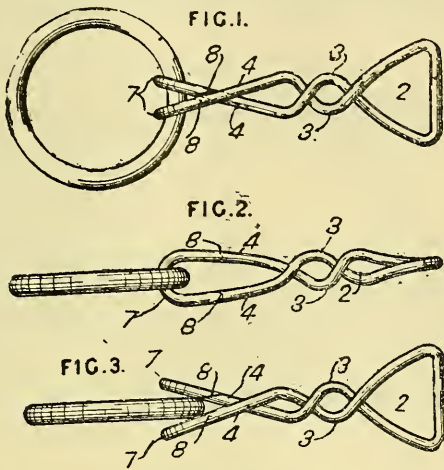
Collars, neck.—The forewale a of the collar comprises a metal tube having a slit b extending throughout its length, through which project a leather wrapper d and a piece e of cloth, which are sewn to a roll or rope c in the tube. The cloth e is covered over the straw body f of the collar, and connected to the barge d' of the wrapper d by stitching g . The leather afterwale h is also sewn to the barge d' . The ends of the rope extend through an enlargement of the slit b at the top of the collar, and are embedded in the straw body f . Hames may be dispensed with, the rein guides, tugs, &c. being connected to the forewale.

7867. Smith, H. P. April 5.

Fastening.—A device for attaching traces to vehicles consists of two members pivoted together, each having a neck part 1 with offsets 2, 3 fitted with studs 5, 6, which pass through a loop on the trace. Eye portions 4 extend from the neck portions and receive the shaft or the like, the part 10 then being forced into a recess 11 to keep the studs 5, 6 in the loop.

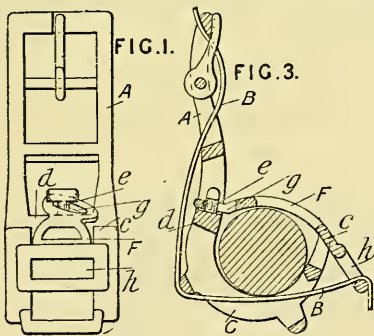


7884. Lawhead, J. W. April 5.



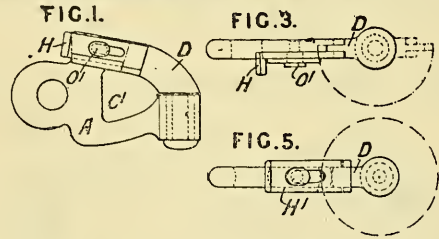
Fastening, snap devices for. A spring hook for attaching straps to the bit ring is made of one piece of wire twisted in the middle as shown at 3, to separate the strap loop 2 from the snap 7. The ends of the wire 4 are crossed and bent oppositely to form hooks 7, the free end 8 of each branch fitting close to the other branch. The bit ring is inserted and withdrawn by pressing it on the hook arms 4, as shown in Fig. 3.

7949. Frost, S. H. June 9, A.D. 1903, [date applied for under Patents Act, A.D. 1901].



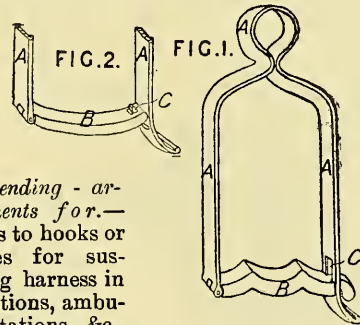
Tugs, shaft.—The shaft, inserted in a hooked extension C of a buckle A, is held by a tongue F tightened down by a strap B of the harness passed through an eye h. The tongue, which engages with the forked end c of the hook, has a diagonally-inclined slot g adapted to be slipped over a T-pin e on a cross-bar d when the tongue is above the part c and turned round against one side of the hook, so that, to remove the tongue, it has to be raised and then turned back to this position.

8241. Dralle, F. H. E. A. April 11.



Fastening.—For releasing fallen horses, the coupling-link for attaching the draught-chains to vehicles is composed of a piece A, Figs. 1, 3, and 5, having the eye C' closed by a pivoted arm D and locked by a slotted bolt H working on a stud O'. On withdrawing the bolt, the arm D opens and the draught-link rides up the suitably-curved arms A, D. The bolt H' may be of U-section, to lock a butt-jointed arm D, as shown in Fig. 5.

8345. Wrathall, J. April 12.

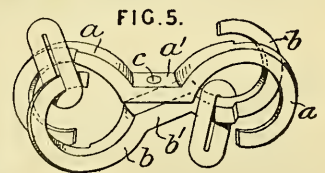


Suspending - arrangements for.—

Relates to hooks or shackles for suspending harness in fire-stations, ambulance stations, &c., so that it can be rapidly released. The harness rests upon the piece B, Figs. 1 and 2, which is hinged to one side of the spring piece A and slips over the edge of a slot C, or upon a pin C on the other side. When the harness is lifted, the piece A springs apart from the piece B, which drops and releases the harness.

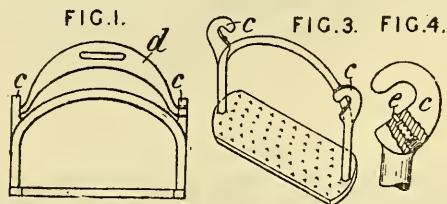
8698. Herrmann, A. April 15.

Fastening traces to whipple-trees. A hook or coupling-link consists of two similar spectacle-shaped members a, b having incomplete eyes. These eyes may be oval or circular in shape, and are joined together by bridges a', b', through which passes the stud c. The eyes taper to their ends, so that, when the



two parts *a, b* are placed together, the complete eyes so formed are of a uniform thickness.

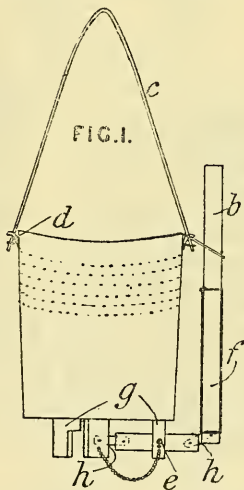
8721. Tegener, F. April 15.



Stirrups.—A safety stirrup consists of the upper part *d* engaging at its ends hooks *c* formed on the lower part. The apertures of the hooks are arranged in opposite directions, so that a twist will cause the separation of the two parts. To prevent the parts from becoming disengaged too easily, a projecting spring pin may be fitted in the aperture of each hook, as shown in Fig. 4 at *e*.

8751. Jackson, T., and Wood, R. L. April 16.

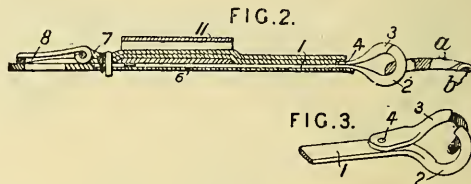
Nosebags.—The nosebag is attached to the horse's head by a strap *c*, the ends of which are slipped through loops or holes *d*, and are prevented from slipping back by pins in its ends. The bag may be supported, when in use, by a jointed leg *b*, which is rendered rigid by sliding over the rule joints *h* a metal tube *f*, and securing it by a pin *e*. When not in use, the leg *b* may be turned up and secured by passing the pin *e* through one of the feet *g* of the bag, and by a loop passing round the head strap *c*.



9492. Thomas, J. April 25.

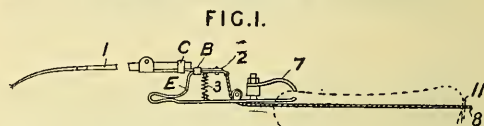
Collars, neck; fastening.—A hame tug is adapted to be readily detached from the hames, and the adjacent parts of harness separated from one another. The draught-bar 1 is formed with a hooked portion 2 to engage the eye *a* on the hame *b*, a hook-shaped member 3, pivoted to

the draught-bar at 4, being adapted to close the opening in the hook 2. The bar 1 is secured in a groove in the leather guard 6, to which is stitched



a strap 7, doubled to receive the trace buckle 8 and covering the pivot 4. The loop 11, for the end of the trace, is secured between the strap and guard.

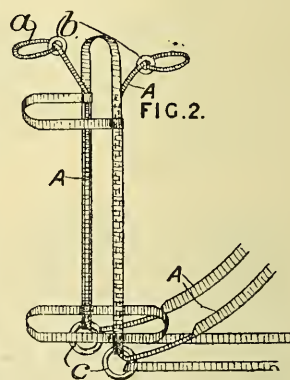
9628. O'Neill, W. April 27.



Whips; whip-holders; saddles.—A saddle attachment for lashing or urging horses comprises a lash 1 secured in a holder *C*, which is pivoted at 2 to a spring steel frame *E* fitted with a spring 3, the attachment being secured to a saddle by a clasp 7. A cord 8, attached to the frame *E*, passes through a leather strap 11 on the saddle, and is pulled by the jockey to cause the lash to strike the horse. The holder can work in a loop *B* so that the lash will not always strike the horse in the same place.

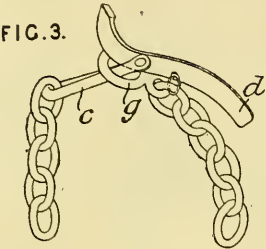
9767. Furber, H. April 28.

Bridles and halters; stopping and controlling runaway and restive animals.—An attachment for bridles for checking restive horses consists of a leather or other suitably covered cord or strap *A*, having loops or slip-knots *a* passing through rings *b* and over the horse's ears. The strap *A* passes through the bit or bridle rings *c*, and then over the horse's neck. By pulling at this part of the strap, the ears are twitched and the bit or gag acted on simultaneously.

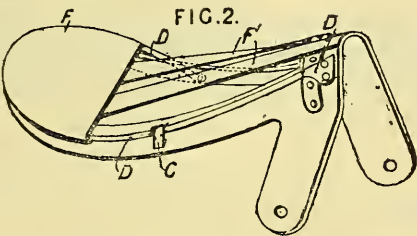


9972. Jensen, P., [Maemecke, J.]. April 30.

Tethering animals; fastening.—A fastening for cattle chains comprises an S-shaped lever *d*, which is pivoted to a U-shaped link *c* on the end of the chain, and confines another link *g* as shown. In the event of an animal falling, the chain is readily unfastened notwithstanding that it may be in tension. A small open ring, which is forced open by the disconnecting-movement of the lever *d*, may be provided to prevent accidental disconnection.

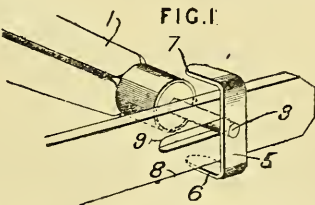


10,284. Head, J. May 4.



Saddles.—An air space is provided between the seat and the panel of a riding-saddle. The iron *D* and the webbing *F*, *F*¹, secured to the saddle-tree, form a foundation for the seat, which may be further supported by a prop or props *C*. The panel is in two parts, so that the air can reach the animal's back. The seat may be perforated near the centre for additional ventilation.

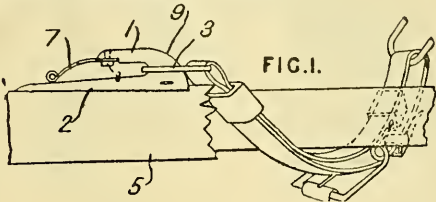
10,337. Johnson, B. May 8, A.D. 1903, [date applied for under Patents Act, A.D. 1901].



Fastening traces. The spiked shank *3* is driven into the end of the ordinary whipple-tree *1*, and carries the rigid plate *5*, the ends *6* of which are bent over and bevelled at the top *7* to facilitate disengagement from the slot *8* in the end of the trace. To attach the trace, it is turned so that the slot *8* is vertical, and the eye *9* is then forced cornerwise over the plate of the hook, the trace

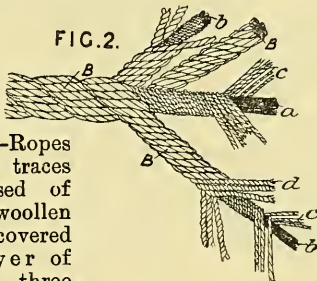
being afterwards rotated on the shank *3* and drawn close to the plate as shown.

10,807. Brake, J. May 10.



Fastening.—Breeching-straps are attached to vehicle shafts so that, without any unbuckling, the horse is free to walk out of the shafts on releasing the traces. A ring *3* at the end of the strap engages the rounded rear part *9* of a hook *1*, the forward end of which is closed by a spring *7*, which is either coiled up at its lower end, as shown, or enters a recess in the plate *2* integral with the hook *1* and screwed on the shaft *5*. The spring permits the ring to pass out of the hook when the traces are unfastened, but prevents accidental escape of the ring when the vehicle is in use.

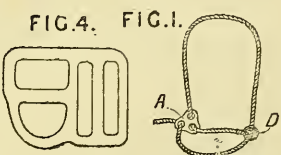
11,514. Schaefer, J. May 19.

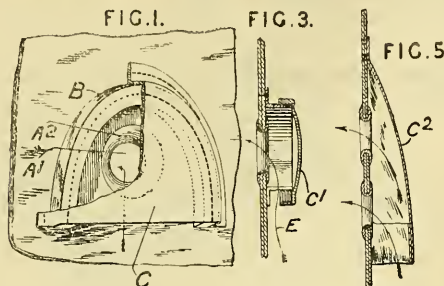


Traces.—Ropes suitable for traces are composed of a core *a* of woollen thread covered with a layer of cotton *c*; three strands *B* are twisted around this central part, each consisting of a core *b* of woollen thread, a layer of cotton thread *c*, and an outside cover *d* of hemp or other hard thread. It is stated that this arrangement diminishes the internal friction and causes the rope to become flexible and elastic.

11,812. Haynes, R. May 24.

Halters.—An adjustable halter consists of a rope or webbing having at one end a loop *D* and passed through holes in a metal or other fitting *A* as shown in Fig. 1, or through the elongated apertures in the fitting shown in Fig. 4.



11,864. Perkins, C. E. May 24.

Clothing for animals.—For ventilating loin-cloths for animals, tarpaulins, tents, and other coverings, a hole A¹ is made in the material, and over this is fitted a flap or shield C of oiled canvas, india-rubber, &c. separated from the material of the cover by a distance-piece B of metal, rubber, wood, or other suitable material. The parts may be secured by stitching, as shown in Fig. 1, and the hole may be protected by an eyelet A². In the arrangement shown in Fig. 3, the distance-piece is in the form of a flanged ring, the lower part of which is cut away to leave an opening for the passage of air, as shown by the arrow E. The cap C¹ screws on the distance-piece. In the arrangement shown in Fig. 5, a separate distance-piece is dispensed with, the shield C², which is stitched to the material of the covering, being of sufficient stiffness to stand away from the material. In another form, the shield is of metal covered with leather &c.

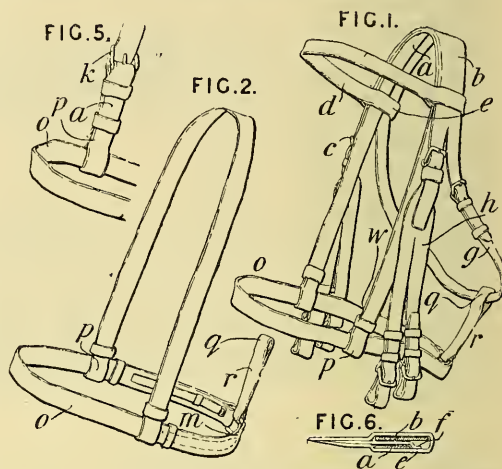
12,118. Beresford, W. S. May 27.

Combs.—Celluloid and like combs are strengthened by a metal or other core in their backs, the core being with or without projections for the teeth.

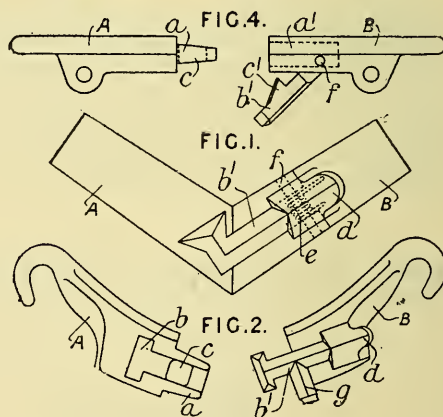
12,276. Dichtl, H. May 30.

Bridles and halters; fastening.—A military or other bridle is converted into a halter by detaching some of its parts. The bit tugs *h* are detached from the complete bridle, Fig. 1, at the buckle *c*, and the ends *v* are inserted in loops *w*. The arrangement of the neck part *b* and neck strap *a* in the loop *e* is shown in Fig. 6, the wedge *f*, which is sewn at both ends, closely enclosing the strap *a*. Three methods of fitting together the halter, Fig. 2, and the bridle so that they can be readily separated are described: (1) the loop *p*, Fig. 2, is replaced by a loop and buckle *k*, Fig. 5, so that, after loosening the buckle, the band *a* can be detached from the browband *d* and from the band *b* by slipping it through the loop *e* and also by slipping the throat strap *g* through the loop *q*, thus releasing the strap *b* from the chin strap *r*; (2) a

buckle is provided at *m*, Fig. 2, which allows the noseband *o* to be passed through the loop *p*, and

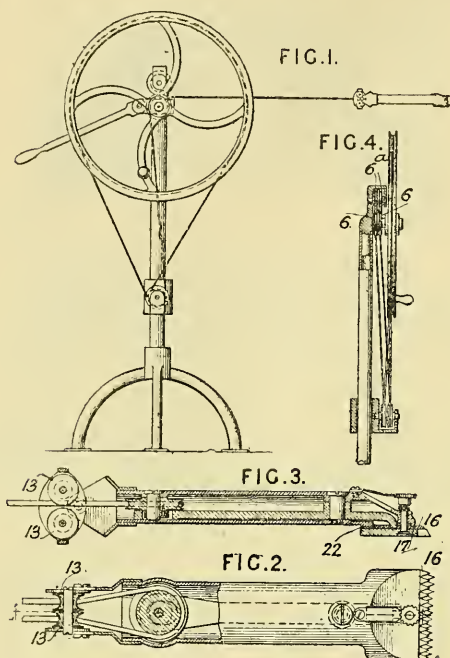


the band *b* is removed as above; (3) the browband *d* is provided with end buckles by means of which it is fastened to the neck strap *a*. In the arrangement (2), a noseband fitted with cavesson rings may be employed.

13,010. Guindollet, P. June 8.

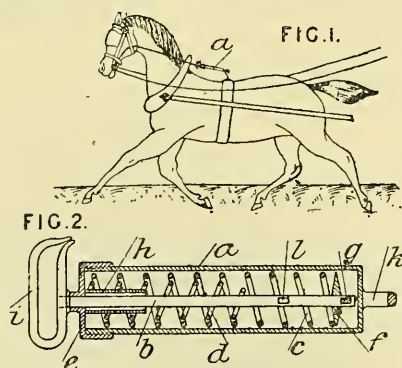
Fastening collars. In a snap device for fastening collars, a member A is formed with a recess *b* to receive the end of a spring lever *b¹* which is pivoted on the member B. A catch *c¹* on the lever *b¹* engages in an opening *c* in the tongue *a* of the member A. The lever *b¹* is normally held in the locking-position by means of a spring *e* on the pin *f*, and is disengaged by pressure on the extension *d*. Fig. 1 shows the form adapted for draught collars. In the modification shown in Fig. 2, the shank *g* of a martingale ring is shown fitted to the lever *b¹*.

kept in working contact by a spring and bolt. The comb is further kept in place by engagement at its rear part with two studs 22 taking into suitable



holes. Between these two studs is a slight protuberance so that the comb may rock slightly to keep it seated always at its forward or toothed end against the reciprocating cutter.

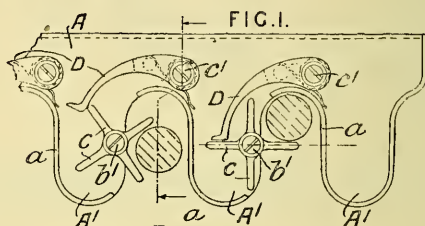
14,051. Thompson, W. P., [Clahsen, J.].
June 21.



Controlling restive animals; horse breaking and training harness.—A spring device for use with breaking-in and check reins of riding and driving horses, for compelling the horse to hold its head up, comprises a rod *b* projecting through a casing *a* and controlled by springs *c*, *d*. The spring *c* is

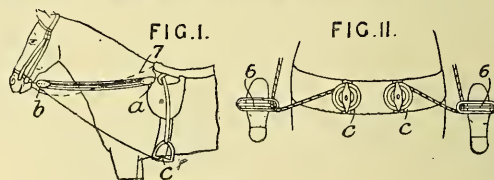
arranged between the cover *e* and a plate *f* kept in position by a pin *g*. The other spring, which is shorter than the first, is passed through the rod. The device is connected to the rein and the saddle by means of a hook *i* on the rod and a loop *k* on the casing. If the animal bends its neck slightly, the spring *c* allows the rod to be drawn out with little resistance. If it bends its neck further, it brings the spring *d* into action, and if it still continues to lower its head it brings the plate *f* on to the tube *h*. To permit lessening of the play of the rod *b* when the device is used on ponies and irritable horses, a hole *l* is made at a distance from the end of the rod to take the pin *g*.

15,291. Skelding, E., [trading as Novelty Rack Co.]. July 8.



Whip-hanging devices.—Relates to a modified form of the rack for holding whips &c. described in Specification No. 12,296, A.D. 1894. An underside plan of the rack is shown in Fig. 1. A plate *A* which can be secured to a wall &c. has projections *A'* between which the whips or other articles can be inserted. The edges of the plate have flanges *a* to afford a sufficient bearing-surface. Inserted articles are retained in position by turnstiles *C*, the arms of which engage with spring-controlled levers *D*. The turnstiles and levers turn on studs formed integrally with the plate *A*, and are secured in position by washers and screws *b'*, *c'*. A bottom plate to retain the parts in position is thus rendered unnecessary.

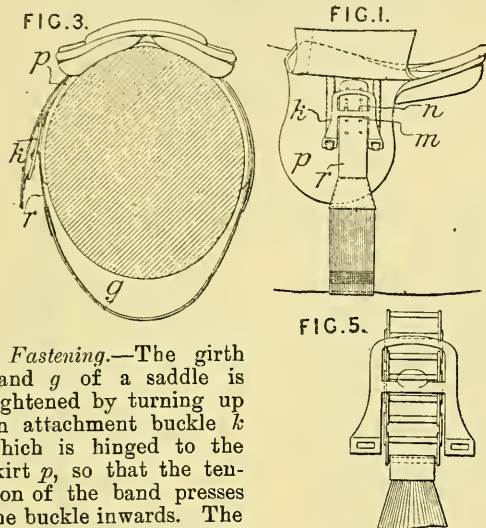
15,348. McCulloch, H. D. July 9.



Bridles.—The reins for guiding and controlling horses pass through the stirrup, and are so arranged as to be operated by the foot of the rider. At both sides of the horse, block pulleys are attached to the bit and saddle, and a spring pulley *c*, Fig. 1, is attached to the underside of the girth. The spring pulley takes up any sag

in the cord and exerts a slight tension on it. The cord passes between the stirrup bars 6, Fig. 11, to the pulleys *a*, *b*, Fig. 1. To control the horse, the rider places his foot on the cord between the stirrup bars and draws back the stirrup, thus shortening the cord between the pulleys *a*, *b*. These pulleys are shown with three sheaves in a block, but only two may be used if desired. An ordinary rein 7 is retained for emergencies.

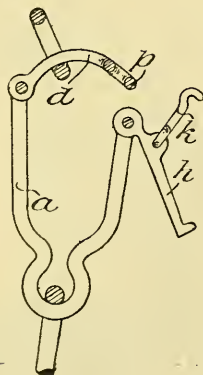
16,014. Hofe, H. K. vom. Nov. 7, A.D. 1903, [date applied for under Patents Act, A.D. 1901].



Fastening.—The girth band *g* of a saddle is tightened by turning up an attachment buckle *k* which is hinged to the skirt *p*, so that the tension of the band presses the buckle inwards. The buckle consists of a U-shaped frame provided with a cross-bar *m* with rigid prongs *n* which engage in holes in the band. In a modification, shown in Fig. 5, an open-link chain engaged by a tongue on the buckle replaces the leather strap *r* and prongs. For double straps, two adjacent buckles have their inner arms pivoted together, and their outer arms hinged to the skirt as shown in Fig. 1, to permit them to move independently.

16,033. Knothe, B. July 19.

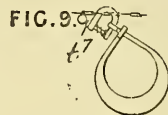
Tethering animals.—A coupling-link for cattle chains has a shackle *d* pivoted to the link *a* and formed with the eye *p*, which is engaged by the hook *k* pivoted to the lever *h*. The hook is secured in the eye by depressing the lever *h*.



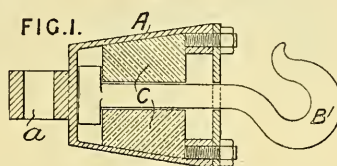
16,430. Woodruff, H. A., and Hulsh, C. H. July 25.

Animals, stocks and like appliances for holding.—

A hobble for securing the feet of animals on an operating-table consists of a padded piece of leather provided at one end with an eye through which the opposite end, also provided with an eye, is passed. The threaded eye is directly attached to a chain, or else by means of the link *b'* provided with a spring-governed bolt.

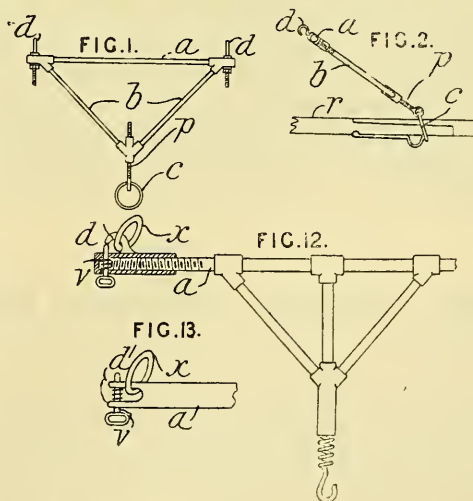


16,472. Morrison, G. July 26.



Fastening traces. A hook fastening for connecting the traces to the hames consists of a hollow tapering casing *A*, with an eye *a* at the narrow end, pivoted to the hames. Blocks of india-rubber *C* are placed in the casing to serve as a spring cushioning when strain is brought to bear on the trace hook *B'*.

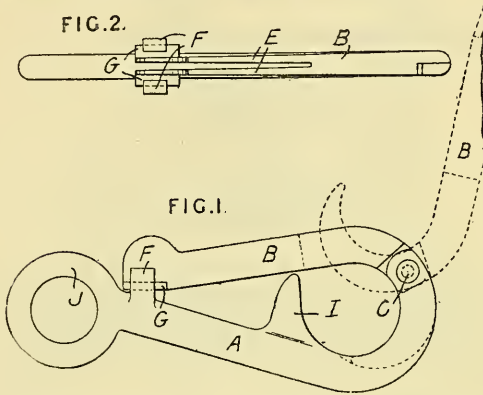
16,508. Mose, M. J. July 26.



Yokes, neck; fastening pole chains. Consists of a triangular jointed framework, Fig. 1, for connecting the breast rings to the front end of the centre pole of a road vehicle. The frame is connected by the hooks *d* to the breast rings of the

horses, and the ring *c* is passed over the end of the pole *r*, Fig. 2. This ring is capable of adjustment by means of the screw *p*. The shape of the bars *a*, *b* may be varied. In the arrangement shown in Fig. 12, the hooks *d* are adjustable on the screwed ends of the frame, and are closed by spring pins *v*. In the form shown in Fig. 13, the hook is replaced by a fork *d*¹, which is closed, after the insertion of the breast ring *x*, by means of a stop pin *v*. In another modification, chains are substituted for the bars *b*.

16,768. Manners, S. H. July 30.

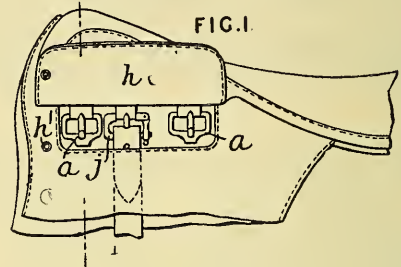
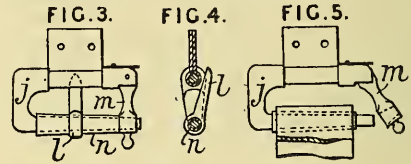


Fastening traces. A hook is formed from two parts, a member *A* and a closing-arm *B*, pivoted together by a flush stud *C*. The arm *B* can be used, if necessary, as a lever to draw together the parts to be connected. When the hook is closed, the strain is borne by the united hooked ends, and a projection *I* retains the connecting rope or link in the lower end of the hook. The upper end of the arm *B* is split longitudinally and is provided with lugs *G*, which, by the springing action of the sides *E*, engage in grooves or catches *F* in the member *A*. A ring *J* or a second hook is provided on the member *A*.

16,806. Rivière, F. J. C. Aug. 19, A.D. 1903, [date applied for under Patents Act, A.D. 1901].

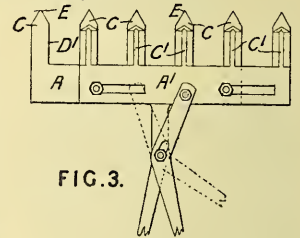
Stirrup straps, suspending; fastening girth straps. The girths and stirrup straps are strapped to buckles attached to the saddle-bar so as to have the least possible thickness of material under the knee of the rider and give a better hold. Underneath the saddle skirt *h*, Fig. 1, which is normally held by a stud *h*¹, the girth buckles *a* and, between them, the stirrup-strap buckle *j* are attached to the saddle-bar. The stirrup buckle *j*, Figs. 3, 4, and 5, has a pivoted rear side *m* held closed by a spring, and the strap rests over a tapered cylinder *n* fitted on the lower arm of the buckle, the tongue *l*

being placed over it. The tongue may be omitted for a double strap, as shown in Fig. 5.

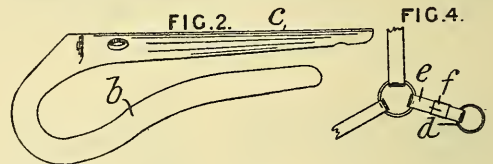


16,830. Napper, H. D. July 30.

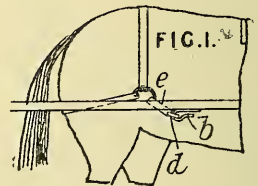
Clippers. — The cutting-members *C*, *C*¹ of shears, similar to those described in Specification No. 3004, A.D. 1904, are formed with their bevelled edges *D*¹ at right-angles to the lower portions of the sliding plates *A*, *A*¹ to adapt the shears for cutting hedges efficiently as well as for cutting grass &c., the end *E* of each cutting-member being tapered.



17,026. Adam, G. T. March 28, [date applied for under Patents Act, A.D. 1901].

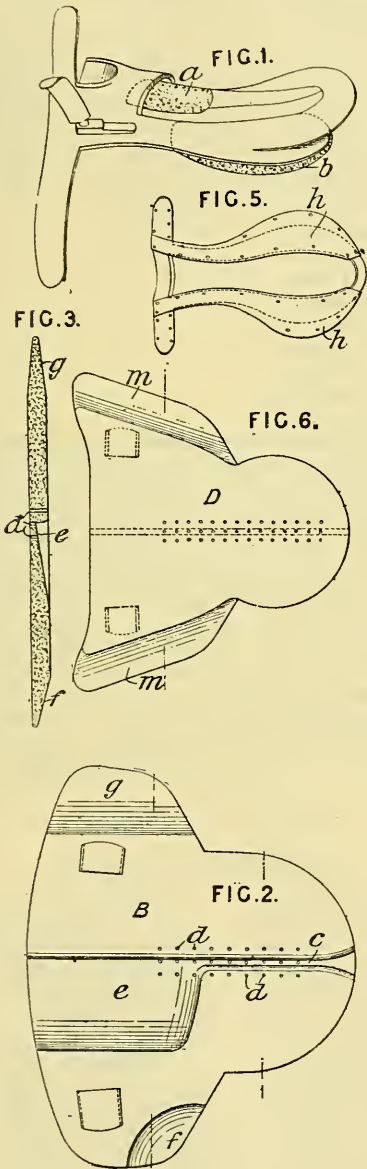


Breeching; fastening. — Breeching straps are secured to vehicle shafts by means of a ring *d* on the strap *e* engaging with a hook *b* on the shaft. The hook consists of a bent portion, with a sag or depression as shown, formed on a sole-plate *c* which is secured to the shaft by



screws. The end of the breeching is fastened to the ring *d* by means of a buckle *f*. The length of the hook and strap *e* is arranged so that the ring *d* cannot become unhooked in the forward motion of the horse unless the traces have been previously disengaged.

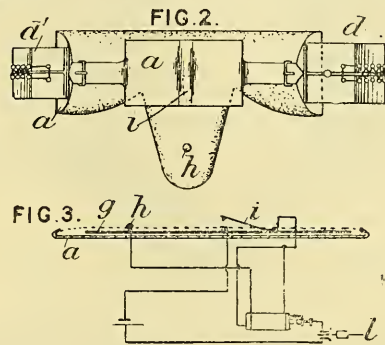
17,505. Richards, J. W. Aug. 11.



Saddles.—Saddles and numnahs are made to fit accurately, and are designed to give a large bearing-surface with a minimum of weight and to prevent rusting of the metallic parts of the saddle-tree.

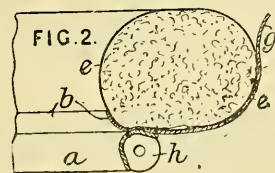
The tree for a side saddle has a pad or thickening-piece *a*, Fig. 1, of cork or other material, on the front off side, and a similar pad *b* on the back near side. This arrangement of the padding prevents the saddle from being twisted out of position by the overhanging weight of the rider. The numnah B, Fig. 2, of felt or other material, is cut to fit the tree and has a channel *c* and ventilating-holes *d*, and is cut away at *e*, *f*, *g*, as shown in Fig. 3. Fig. 5 shows a tree for a man's saddle. All the bearing-surface *h* is covered, the numnah D, Fig. 6, being thinned down as shown at *m*.

17,814. Stevens, F., and Huish, C. H. Aug. 16.



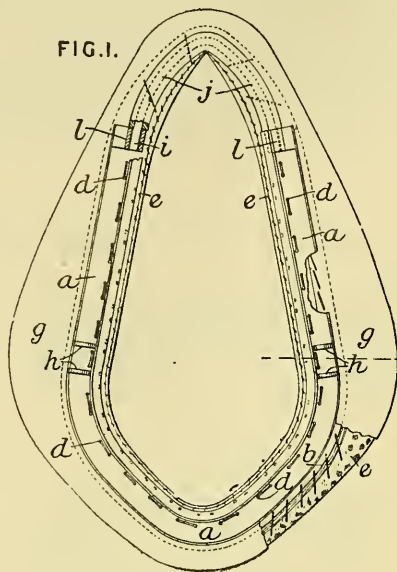
Crib-biting, preventing.—A battery *d* and induction coil *d'* are arranged on a band *a*, Fig. 2, passing around a horse's neck, and a flexible metal band *g*, Fig. 3, is placed over the bottom of the band. Carried by this band *g* is a stud *h* which presses against the animal's skin, and a spring contact *i* which is insulated from the band *g*. When the horse extends the muscles of the neck in the action of crib-biting or wind-sucking, the spring *i* is depressed and the primary circuit completed. The secondary circuit is connected to the stud *h* and a shock is administered to the horse. A key *l* may be inserted in the primary circuit.

17,850. Powell, E. C. Aug. 17.



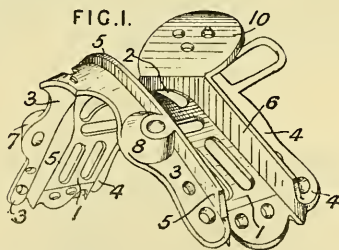
Collars, neck.—A metal forewale *a* of open-channel or angular cross-section is secured to the barge *b* by stitches through holes *d* made in the forewale. The outer covering *e* of the collar and the afterwale *g* are fastened to opposite sides of the barge,

or the covering *e* may be fastened to the forewale *a* by stitching through holes in the latter. Draught-tugs are fastened to lugs *h* on the forewale. The forewale may be made in one piece or may have a



removable top piece *i* of steel or other metal enclosed in a roll or pad *j*. This bar fits into sockets *l* provided in the forewale *a* and is sewn or otherwise secured to the barge so that, if it catches any projection in mine galleries, it is easily wrenched off.

18,401. Nicklin, G. M., Nicklin, C., and Schofield, S., [trading as Nicklin & Schofield]. Aug. 25.



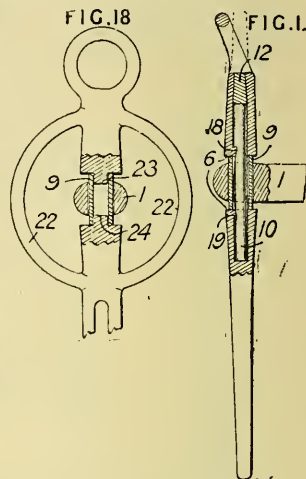
Saddles, harness. Trees for gig, cab, and like saddles, particularly those of the form described in Specification No. 3531, A.D. 1901, are cast, preferably in aluminium. The floor 1 of the backband groove is continued over the top 2 of the arch. The flanges 3, 4 are made at some little distance below the tops of the sides 5, 6 to facilitate the fixing of the leather parts thereto. The terrets may be fixed in bosses 7, 8, or riveted to the flange 3. A shaped wooden block, to which

the cantle covering may be tacked, is preferably fixed beneath the cantle 10.

18,482. Beard, F. J., [trading as Brodhurst & Co., V.]. Aug. 26.

Bits.—The side cheeks of the bit are constructed to take a sliding mouthpiece formed integrally with an eye at each end. In the arrangement shown in Fig. 1, each side cheek is formed with a gap 6 in which is fitted a nickel or other non-rusting tube 9 on which the mouthpiece 1 slides.

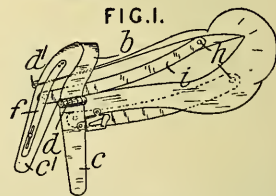
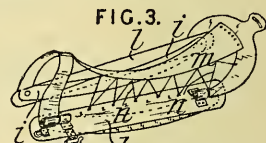
This tube is secured in place by a pin 10, which is passed down a central hole from the top of the cheek and may be fixed in position by riveting the cheek over its top or by squeezing the metal of the cheek into depressions 18, 19 in the pin. The central hole in the cheek is closed by a preferably conical non-rusting plug 12. When the tube 9 is square in cross-section, its ends are inclined to fit inclined slots in the cheek, and the ends of a cylindrical tube may be sunk into recesses in the cheek, in which case the pin 10 may be dispensed with. Sometimes the pin 10 has a non-rusting tube drawn over it, when the tube 9 is not required. In the modification shown in Fig. 18, the tube 9 is fitted over projecting pins 23, 24 on the cheek, the bow 22 being elongated to facilitate the insertion of the tube, and afterwards forced into its normal shape.



18,740. Szameitat, C. Aug. 30.

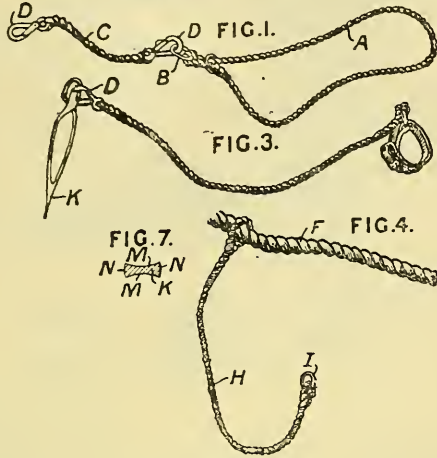
Saddles, riding.

The saddle is adapted to adjust itself to the contour of the back of the horse. In one form, the flaps *c, c'*, hinged to the saddle-tree at *d, d'*, are drawn against the animal's side by blade springs *f*, which are secured in the arch *b* and connected to the flaps by pins and slots. Side springs *i* are secured to the tree at *h* and fastened at their



forward ends to the flaps or the springs *f*. The springs *f*, *i* are padded. In a modification, Fig. 3, the flaps *c*, *c'* are dispensed with. The springs *i* are fixed beneath side bars *l*, and the pommel, cantle, and side bars are connected together by a leather strip *m* with lacings *n*.

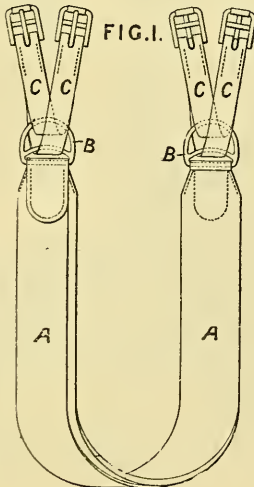
18,970. Spittle, S. Sept. 2.



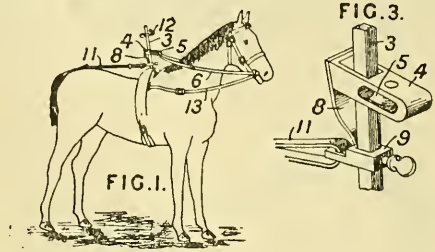
Tethering animals.—A rope C, Fig. 1, provided at each end with a swivel hook D, is connected at one end to a ring B on a neck rope A, the other end being connected to a ring I, Fig. 4, on a rope H attached to a rope F or to a tethering-peg K, Fig. 3. The tethering-peg K is formed with hollowed sides M, Fig. 7, and expanded edges N. Several horses may be tethered together by connecting the free swivel on the rope C to the ring B on the adjacent horse. A heel rope, Fig. 3, may be connected to the peg K by a swivel hook D.

19,128. Eastwell, A., and Pulvermacher, S. Sept. 5.

Saddles, girths for. The girth A is formed of three folds of leather &c. to prevent chafing the horse, and to each end is secured a double D-ring B. A double strap C at each end of the girth passes through the ring, the two loops passing through in opposite directions.



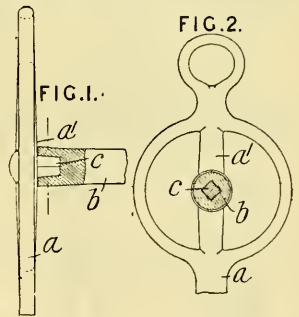
19,548. Gordery, E. Sept. 10.



Horse breaking and training harness.—To permit the horse to turn its head freely, the loop of the mouthing-reins 6 passes round a pulley 5 carried by a bracket 4, which is supported on a pillar 3, as shown in Fig. 3, by a spring 8 fastened by an adjustable clip 9. The spring allows the animal to move its head in a forward or downward direction without undue punishment. The pillar is stayed by a crupper 11. Side reins 13 may be provided, and a hook 12 for additional reins if required.

19,596. Dewsbury, A., [trading as Dewsbury & Son, J.]. Sept. 12.

Bits with immovable mouth-bars. The cheek *a* has a vertical bar *a'* carrying integrally the square or other non circular stud *c*, which is brazed into a corresponding recess in the end of the mouth-bar *b*. The stud may be formed directly on the bar *a'*, or the latter may carry a boss on which the stud is formed and against which the end of the mouth-bar abuts. In another form, the bar *a'* is recessed to receive the non-circular end of the mouth-bar.

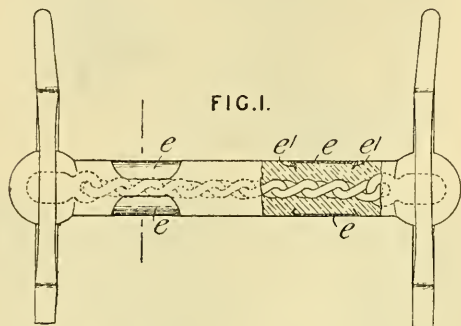


19,597. Dewsbury, A., [trading as Dewsbury & Son, J.]. Sept. 12.



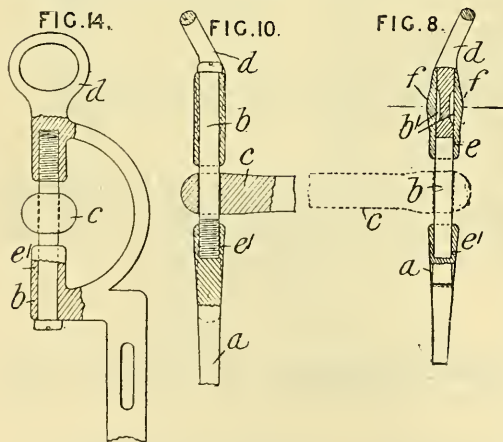
Bits.—Bits having mouthpieces wholly or partly made from, or covered with, non-metallic material

are fitted with metallic or other protecting-plates to prevent animals from biting through the rubber or other covering. The plates *e* may be of saddle form, as shown in Figs. 1, 6, and 7, having turned-in edges *e'*, which are embedded in the rubber



before vulcanization, and staples *e''* may be fitted to afford further hold. Alternative forms consist of tubes which are embedded flush with the covering and may be split and formed with turned-in edges *e'*, Fig. 8; or complete sleeves may be made by encircling the mouthpiece covering with metallic strips, preferably laid in grooves and secured by indenting the metal in places. The plates may be of metal, vulcanite, xylonite, woodite, bone, ivory, horn, or other hard material.

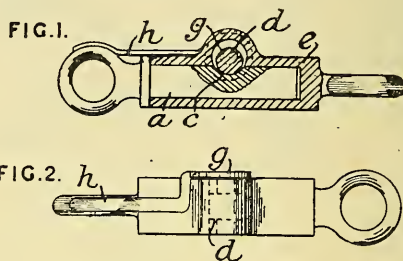
19,598. Dewsbury, A., [trading as Dewsbury & Son, J.]. Sept. 12.



Bits with movable mouth-bars. The mouth-bar *c*, Fig. 8, slides on steel or other hard-metal pins *b* introduced from above into holes *e*, *e'* in the cheek pieces *a*, the loops *d* being bent aside as shown, and bent back again after insertion of the pins. The pins are recessed at *b'* to receive the swelled portions *f* of the upper bosses of the cheeks, these

portions being squeezed into the recesses to secure the pins. In a modification, the loops *d*, Fig. 10, are permanently cranked so as to admit pins *b* which are screwed into the upper boss *e* or the lower boss *e'* of the cheeks. In another modification, the pin *b* is plain and is secured by a set-screw in the upper boss or by a screw, cottar, or pin passing through the boss and pin. For elbow and similar bits, the loops *d* are not bent, and the pins *b* are inserted from below, as shown in Fig. 14.

21,218. Johnson, A. B. Oct. 3.

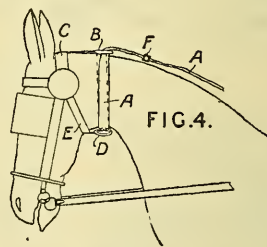


Fastening.—A coupling-link for harness traces, bails, &c. consists of a bolt *a* on one member, which enters a socket *e* on the other member and is retained by a cam *d* engaging a recess *c*. The cam is formed on a spindle *g*, which is mounted in the socket *e* and provided with an operating-handle *h*. The spindle *g* may be made parallel with the bolt, or the locking-piece may be made cylindrical and have a cut-away portion corresponding to the recess in the bolt.

21,265. Allen, A. Oct. 4.

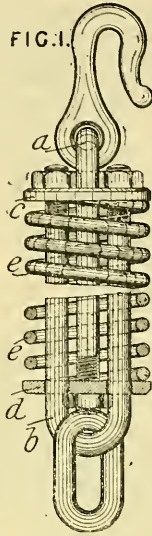
Stopping and controlling runaway animals.—In an arrangement for controlling runaway horses by choking,

a rein *A*, carrying a ring *B* at one end, passes around the neck, through another ring *D*, through the ring *B* again, and along the horse's back, the other end being fastened within reach of the driver by a buckle, spring hook, or the like. The rings *B*, *D* are attached to the bridle *C* and throat-lash *E* respectively, and a stop-bar *F* prevents the loop around the throat from becoming too loose. For teams of horses, the attachments are buckled together.



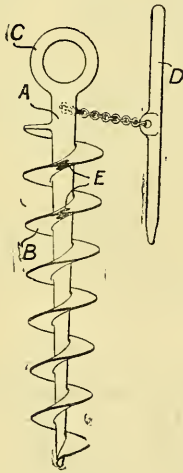
21,627. Berghoff, A., and Krause, A. Oct. 10, A.D. 1903, [date applied for under Patents Act, A.D. 1901].

Fastening traces. A draw-spring for attaching traces to vehicles consists of two interlocked U-shaped bars *a, b*, at the ends of which are plates *c, d*, secured by nuts and bearing on the spring *e*, which, under draught, is always in compression.



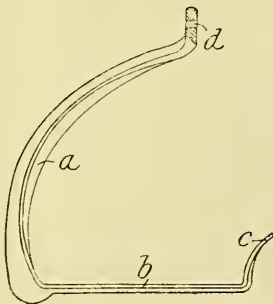
22,107. Connor, J. H. Oct. 14.

Tethering animals.—A peg *A*, for tethering animals and securing the guy ropes of tents and telegraph poles, is formed with a tapering screw thread *B* and a ring *C* at its upper end. A handle *D* is attached to the peg and inserted in holes *E* in the screw thread when not in use.



22,555. Davenport, V. E. Oct. 19.

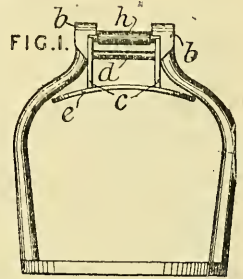
Stirrups.—A safety stirrup-iron of oval, T, or other section has only one leg *a*, integrally with which is formed the tread *b*, having an upturned end *c*. The top of the bow *a* is provided with an eye *d* for taking the stirrup-strap, the direction of which



eye may be perpendicular to or parallel with that of the tread *b*.

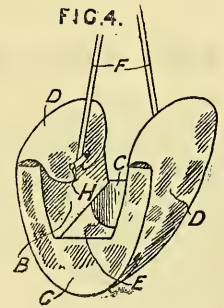
23,014. Meier, R. Oct. 25.

Stirrups, safety. A frame *c* is pivoted on a pin *d*, and a pin *h* is held between semicylindrical recesses in the upper ends of the side bars of the frame and in projections *b* on the sides of the stirrup-iron. Should the rider fall, his foot presses against the curved part *e* of the frame *c* and turns it about the pin *d*, so that the pin *h* escapes and the stirrup-iron is released from its strap.



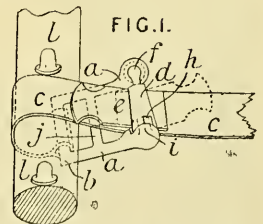
23,163. Barthels, G. Oct. 27.

Nosebags and food-containers.—The fodder is contained in compartments at each side of the nosebag, and passes gradually to the open central part *E* from which the horse feeds. In making the bag, the end U-shaped pieces *C* are connected at their outside edges by a piece of material *D*, and at their inner side edges by pieces *B* in which are encased metal rods to give rigidity. The ends of the piece *B* extend over the side compartments to form flaps, which are secured over the head straps *F* by fastenings *H*.



23,459. Nandor, S. Oct. 31.

Fastening.—A device for securing traces to splinter-bars &c. so that they can be readily removed, can also be attached to hame or breeching rings, and used for fastening hames and belts or bands generally. A bar *d*, connected to one side of the frame *a* by a ball-and-socket joint *f*, is formed in one with a plate *e*, and its free end is cup-shaped and has a slot *h* to enable it to pass over a stud *i* on the opposite side of the frame. The trace *C* is connected to the bar *b*, and, after passing round the splinter-bar *l*, is secured

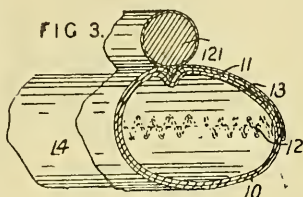


between the sides of the frame by fitting the bar *d* over the stud *i* and turning the plate *e* down on to the trace as shown. A cross-bar *j* keeps the trace in contact with the plate while the latter is being turned into the releasing position shown in dotted lines.

23,788. Ost, W. Nov. 3.

Collars, neck.—

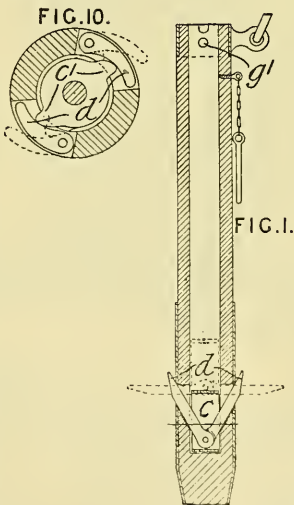
The inflated bag 14 of a pneumatic collar is enclosed in flaps 10, 11, sewn together at the forewale 121 and having their edges connected by lacing 12 so that the bag can be removed. The laced joint is covered by a flap 13, which is sewn to the flaps 10, 11 at the forewale and is preferably more highly finished. The bag is preferably of damp-proof material; it is fitted with a valve, and, with the collar, may be in sections.



24,220. Bosley, W. J. Nov. 9.

Tethering animals.

—Pegs for picketing horses, tent pegging, and the like are provided with movable tines, which contract while the peg is being driven into the ground but expand and anchor the peg when an attempt is made to pull it out of the ground; or the tines can be contracted by the operator preparatory to driving the peg, and expanded after the peg has been driven. In the form shown in Fig. 1, the tines *d* are pivoted to a piece *C* sliding in the hollow stem of the peg. The peg is driven into the ground by means of a rod inserted in the hollow of the stem, its lower end bearing on the piece *C* and causing the tines to contract as shown in full lines. When the rod is removed, any attempt to withdraw the peg results in the expansion of the tines as shown in dotted lines. The peg can be withdrawn by first inserting the rod and fixing it by means of a pin at *g*¹. In a modification, the rod is attached to the piece *C* and remains permanently in the stem of the peg, its upper end being connected to to the tethering-rope. In another modification,

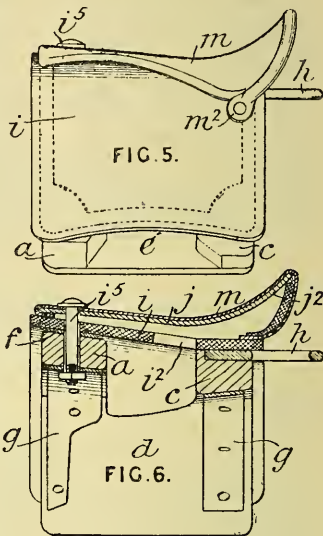


the rod is screwed at its lower end and is rotated to expand or contract the tines. In the modification shown in the enlarged cross-section in Fig. 10, the tines are hinged in slots in the stem and are expanded by means of a cam *C*¹.

24,398. Noake, J., and Noake, J. Nov. 11.

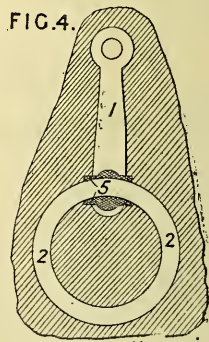
Saddles, harness.

The tree of gig and like saddles is made without a cantle, and comprises wooden side pieces *d*, *e* connected by arch-shaped bars *a*, *c*. It is provided with a head plate *f*, gullet plates *g*, and a crupper loop *h* which is riveted on each side of the apex of the bar *c*. The skirts are formed by a piece *i* of leather, nailed to the tree. A metal frame *j*, formed with a cantle *j*² and covered with leather *m*, has ears *m*² at each side which are introduced through an opening *i*² in the piece *i* and fastened to the tree. The front of the frame is secured by a pin *i*⁵, which may serve as the bearing-rein post. The usual flaps and padding are provided.



24,534. Ashwell, W., and Gameson, A. Nov. 12.

Bits.—The butt or mouthpiece 1, Fig. 4, of a Wilson snaffle, bridoon, or similar bit is attached to the ring 2 by casting it around the ring. A core 5 is formed on the ring 2 and placed in a mould into which metal is run to form the butt. The ring and the butt can be cast at the same time by placing in the mould the core 5, which has a hole through it corresponding to the shape and cross-section of the ring, and running the metal to form the ring inside the hole in the core, and the metal to form the butt over the outside of the core.



24,652. Ihle, J. Nov. 14.

FIG. 1.

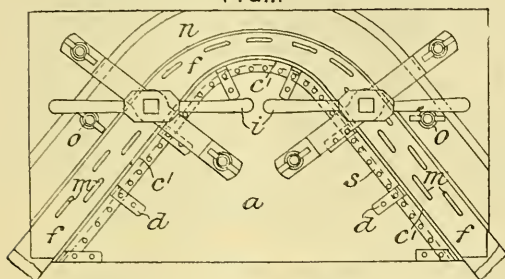
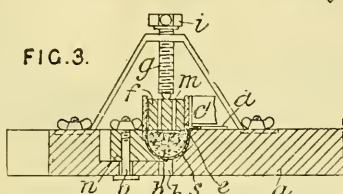


FIG. 3.



Collars, neck.—A stuffed roll for padding a horse collar is made by pressing straw in a linen or like cover in the apparatus shown in plan and cross-section respectively in Figs. 1 and 3. A table *a* has a channel *b* corresponding to the shape of the collar. The rail *c¹*, at one side of the channel, is secured to the table by brackets *d* so as to leave a space *e* between the table and the rail, and the outer rail is carried on a block *n* which can be secured in various positions by screws *o* to alter the width of the channel. A cover *s* is laid in the channel, one edge being drawn through the space *e* and pinned to the table. Straw is then inserted, and the other edge of the cover is drawn over it and through the space *e*, being held tight while a block *f* is forced down by screws *g* having handles *i*. The cover is sewn over the straw through slots *k, m* in the table and block *f* respectively, and, after the block has been removed, through perforations along one side of the channel. Plates on the block *n* prevent the stuffing from being pressed into the slots. The external straw portion only of the pad may be compressed, the part on the inner side of the collar being left resilient. The complete collar is shown in Figs. 7 and 8. It is put together by attaching the pad 3 to wooden boards 2, covering the pad with a linen cloth 4, the edges of which are secured in grooves *x* in the boards 2, and then stretching a piece 5 of leather over the cloth and securing its edges in grooves *y*. A belt *z* is arranged around the leather. The boards 2 carry the rein rings and the trace hooks *w*.

FIG. 7.

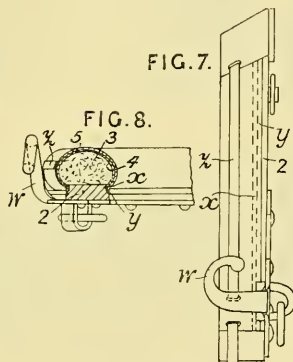
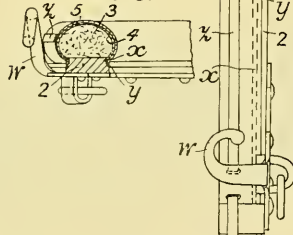


FIG. 8.



24,884. Leuthold, H. Nov. 16.

FIG. 2.



Fastening.—A fastening for straps &c. which may also be used for girths consists of a frame 1, to which one end of the strap is secured as usual. The frame is provided with projections 2 to engage a pressure member or cross-bar 3, which slides in slots in an oscillating frame 4, 5. The fastening is retained in the closed position by passing the free end of the strap through a loop in the fixed frame, the oscillating frame being extended towards the loop. By extending the frame in the opposite direction, a further straining action is obtained on closing the frame. By forming this extension with an eye 7, a padlock or other safety lock may be inserted.

25,074. Bird, D. Nov. 18.

FIG. 2.

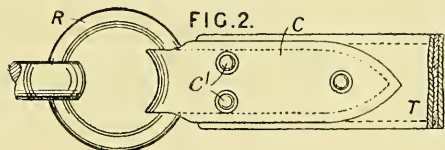
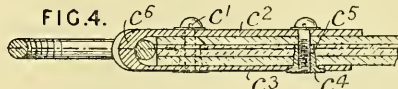


FIG. 4.

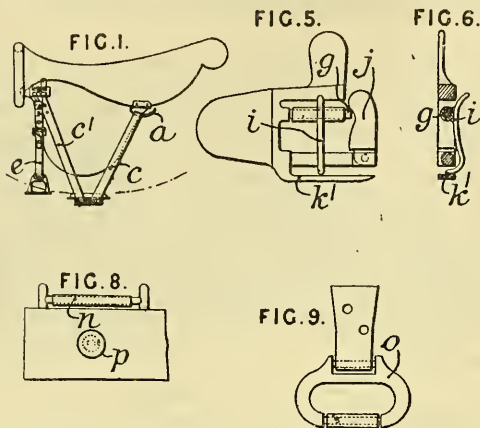


Fastening.—Traces *T*, Fig. 2, and the like are connected to the pull-rings *R* of the hames, or to other parts of the harness, by means of a metal loop *C*. The two sides *c², c³*, Fig. 4, of this loop are fastened to the trace by pins *c¹* which are screwed into nuts *c⁴*, the necks *c⁵* of which are let into the trace. The end *c⁶* of the metal loop is made thicker than the sides, and is also curved to the shape of the ring *R*. In a modification, the loop is fastened by rivets. The arrangement is specially applicable to traces which have worn through at the pull-ring.

25,286. Richard, J. Nov. 21, A.D. 1903
[date applied for under Patents Act, A.D. 1901].

Saddles; stirrup straps, suspending.—Special arrangements of strapping are adopted in connection with saddles with a view to dispense with the usual girths and to provide for the automatic tightening of the straps by the pressure on the stirrups or by the weight of the load carried. The straps *c, c¹*, which are used instead of girths, cross each other under the belly of the animal. To prevent chafing, they pass under rollers fitted in a padded frame at the crossing-point. The rear end of each strap is attached to a loop *a* on the saddle-tree; the forward end passes between the members of the saddle-bar shown in detail in Figs. 5 and 6, and is secured by a tongue *i* engaging

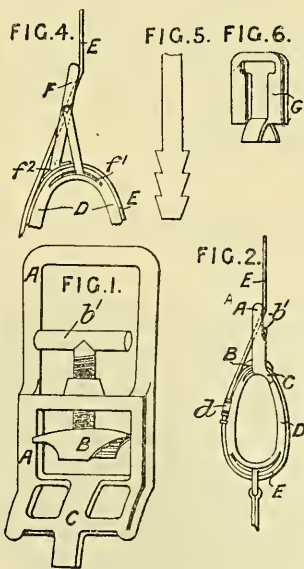
in one of the holes. The stirrup leather *e* is attached to the downwardly-projecting end of the strap. If the rider is thrown, the tongue *i* of the saddle-bar slips off the stem *g* after depressing



the hinged end *j* of the bar, thus freeing the strap. The lower end of the tongue may be protected by a guard *k*. In the case of light racing or other saddles, the saddle-bar may consist simply of a bar carrying a roller *n*, Fig. 8, over which the strap passes, and a button *p* which will automatically enter the hole in the strap opposite to it when the weight of the rider bears upon the stirrup. In the case of pack saddles, one end of the strap is fixed to the saddle; the other end, after passing under the belly of the animal, passes through a loop *o* at the other side of the saddle and carries the load, which thus serves to keep the strap tight.

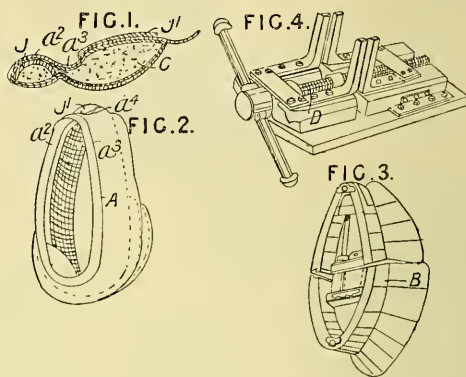
25,714. Taylor, J. B. Nov. 25.

Fastening.—Shaft tugs are fastened to the backband by means of a tongueless buckle shown in Fig. 1. The backband passes through the buckle *A*, round the shaft tug *D*, Fig. 2, under the plate *B*, and through the keeper *d* fastened on the neckband. The band is clamped in this position by a pivoted plate *B* operated by a screw or by a lever. Modified arrangements for clamping are shown in Fig. 4. The buckle *F* has a hinged frame, the



base of which is secured to the tug. The lower part *f*² of the buckle forms a gripping-plate so that the buckle itself acts as a clamp, the part of the band passing through the buckle causing the plate *f*² to bind upon the end portion of the strap. Fig. 6 shows a buckle in which the strap, after encircling the tug, lies in the lower part of the frame *G*, and is prevented from freeing itself by the sides of the frame engaging with notches formed on the end of the strap, as shown in Fig. 5.

25,803. Williams, G. H. Nov. 28.

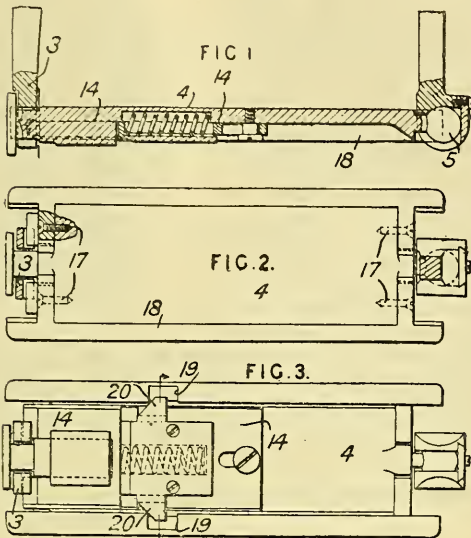


Collars, neck.—The leather covering *A*, Fig. 1, of a horse collar is made in one piece. The leather in a supple condition is placed over a former *B*, Fig. 3, made in two halves so that it can be expanded by a screw apparatus *D*, Fig. 4, to stretch and mould the leather to the shape of the former. A rope is placed round the leather to form the recess *a*³, Fig. 2, for the hames as the leather is stretched. The leather is then transferred to a skeleton block to enable the filling *C* to be inserted and sewn within the forewale *a*². The collar is then placed upon a finishing-block similar to the block *B*, Fig. 3, and again stretched by means of the expanding-apparatus *D*, Fig. 4. A false nose, either fixed or worked by a screw, is fitted to the top of the finishing-block to form the peak *a*⁴, Fig. 1, on the top of the forewale, and a similar device may be fitted to the bottom for making windpipe collars. Metal strengthening-pieces *J*, *J*¹, Figs. 1 and 2, may be fitted inside the forewale and on the top of the collar.

25,860. Wolff, G., and Tobler, F. Nov. 28.

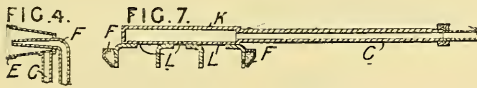
Stirrups.—In a safety stirrup, which will release the foot of the rider in the event of his being thrown, the footplate 4 is hinged on a ball joint 5 at one end, the other end being sustained in the forked end 3 of the bow by a sliding spring latch 14. If the rider falls, the pressure of his foot on the side edge of the footplate will cause the withdrawal of the latch and the footplate will

then open by turning on the joint 5. The withdrawal of the latch is effected by the means shown in Figs. 2 and 3, which show the footplate in plan and inverted plan respectively. The side



margins 18 of the footplate are hinged to turn on pins 17, Fig. 2, and in their lower surfaces are notches 19, Fig. 3, the edges of which bear upon inclined lugs 20 on the latch. Thus, when the margin 18 turns on the pins 17 by the pressure of the foot, the edge of the notch 19 will slide on the inclined lug 20 and withdraw the latch.

26,337. Fawcus, G. H., and Marr, A.
Dec. 3.



Currycombs.—Relates to means and apparatus for extracting moisture or other matter from the skin, hair, &c. of living animals by suction. In one form, a nozzle of suitable shape is connected to a fan or other exhaust. In the modified form shown in Fig. 4, the nozzle, which is connected by a pipe C to the exhaust, is fitted with a rubber or other sealing-ring E and with a second pipe or nozzle F adapted to project a spray or jet of gas, liquid, or powder on to the part under treatment. Suitable two- or three-way cocks may be fitted in the tubes C, F. Fig. 7 shows a currycomb for use on horses or other animals. The hollow back K communicates by passages L with the spaces between the teeth of the comb and by a pipe C to the exhaust. A chamber F, through which vapour &c. may be discharged, may be fitted as shown.

26,655. O'Connor, T. B. Dec. 7.

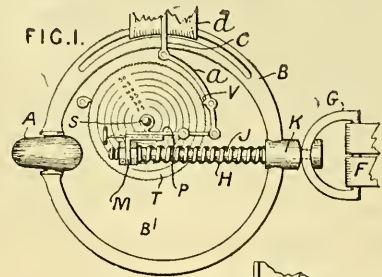


FIG. 2.

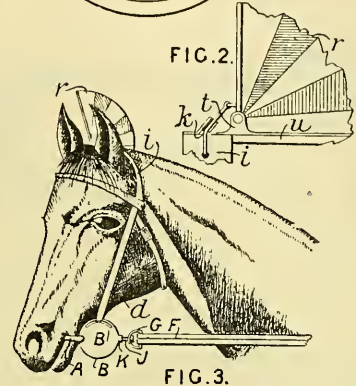
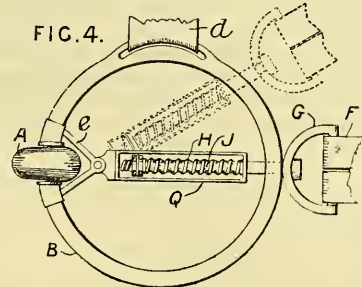


FIG. 3.

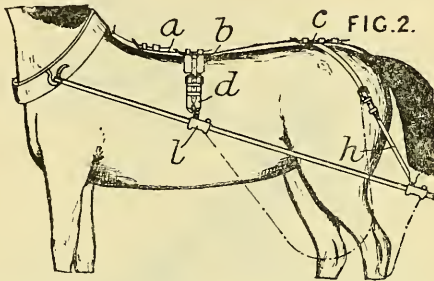
FIG. 4.



Bridles.—Bridles for racing and other horses are fitted with a device for easing, registering, and indicating the pull of the rider on the reins. The reins F are connected to a ring G swivelling on a rod J, which can slide through a collar K on the bit ring B of the bit A, against the pressure of a spring H. The rod has secured to it an angle-piece M, on which is adjustably fixed a bar P carrying a piece S of graphite. When the reins are pulled, the graphite records the extent of the pull on a disc T, which may be graduated with concentric circles as shown. At each pull, the disc T is rotated by a pawl V on a lever a, pivoted to one of the side discs B' and linked to the rod P. This lever is connected to a rod or flexible connection c, which runs up a recess in the cheek strap d and is joined to a cord or wire k, Fig. 2, by means of which a fan r is opened to an extent corresponding to the pull on the reins. The bearings t for the fan are secured to a leather pad u attached to the head strap i. Differently-coloured sectors appear successively as the fan is opened out, and indicate the various pulls on the reins during a race. The fan

may be fitted in various positions on the harness, and a number of fans may be used. Instead of the fan, a rosette, adapted to show different colours, can be employed. In a modification of the easing-device, the rod J, Fig. 4, passes through a slot in the bit ring B and into a frame Q pivoted to the stay e. The means for easing the pull may be used alone.

27,148. Schreven, J. Dec. 13.

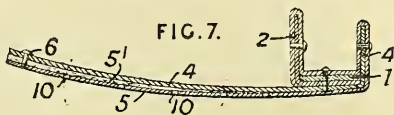


Traces; backbands; harnessing, systems of.—The traces are suspended by straps *h, d* to prevent horses &c. from overstepping them. The straps are hooked at one end to collars *l*, adapted to be fastened by means of screws in any position on the traces, and at the other end to straps *a, b, c*, which are connected together and to the collar. If a girth is used, the front strap *a* may be omitted.

27,176. Kessler, A. Dec. 13.

Lining and padding; pads for.—A lining, or separate slip, for use in connection with hames, collars, saddles, straps, and the like, for preventing or healing sores in animals, comprises a piece of woollen cloth, felt, or the like having a fine nap, which is impregnated or pasted over with any anti-septic preparation and, if necessary, with some veterinary ointment.

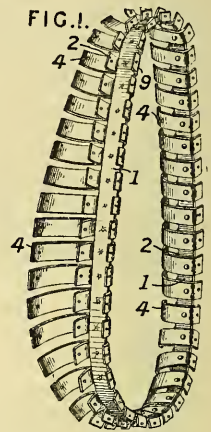
27,726. Fontaine, H. A., and Kellogg, D. W. Dec. 19.



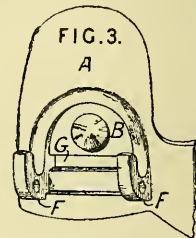
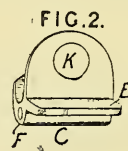
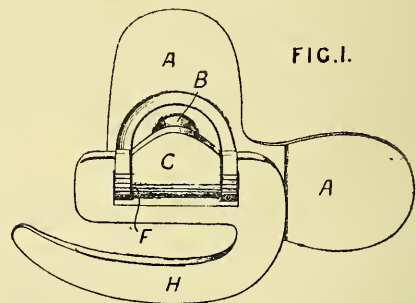
Collars, neck.—The collar comprises two series of superposed springs secured to a rim or band, their ends being bent into the shape of a trough,

as shown in Fig. 7, to take the hames. The springs 4 also form a resilient cushion for bearing against the shoulders and neck of the horse. The springs 2, 4 are riveted to the band 1. A sheet-metal, leather, raw-hide, or other covering 5 is riveted over the walls of the trough and extended beneath the springs 4, to the free ends of which it is riveted at 6. Or its outer edge may be secured to a flat band carried on the free ends of the springs, or to a wire round which the free ends of the springs

would be curled. The springs 2, 4 may be bent from one piece of metal, as shown at 9, Fig. 1. The lining may have a cover 5', and may be provided with ventilating-holes 10 where it bears against the animal's shoulder. The trough for the hames may be made of a single strip of metal instead of being formed by springs.



27,819. Bolt, J. Dec. 20.

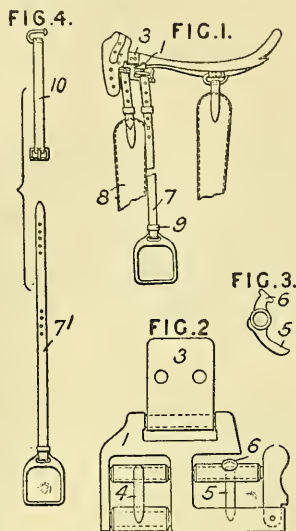


Stirrup straps, suspending.—A safety saddle-bar H rests on a hooked plate C pivoted at F to a back-plate A. The plate C is formed with a tongue E, Fig. 2, which enters a slot G in the back-plate and allows the plate C to rock slightly. A button B formed on the back-plate A projects a short distance through a hole K in the plate C and normally prevents the bar H from coming out of the hooked plate C. On rocking the plate C so that the button B does not project through the

hole K, the saddle-bar H can be detached. The Provisional Specification describes the use of studs in place of the tongue E.

27,850. Richard, J. Jan. 29, [date applied for under Patents Act, A.D. 1901].

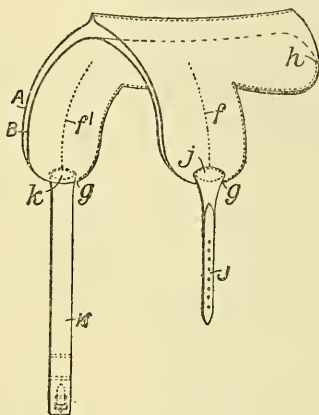
Stirrup straps; stirrup straps, suspending.—An improvement upon the saddle described in Specification No. 25,286, A.D. 1904, consists of attaching thereto a double stirrup-bar 1, Figs. 1 and 2, by means of a hinge piece 3, so that the strapping of the girth band 8, by means of a tongue 4, does not alter the height of the stirrup, the strap 7 of which is secured by a separate tongue 5. A metal or leather keeper 9, which permits of the removal of the stirrup, is provided at the bottom of the straps 7. The tongue 5 has a backward projection 6, Fig. 3, which is pressed with the finger when buckling. A stirrup strap 7¹, Fig. 4, for a lady's saddle, has two sets of holes, by which it is buckled to another strap 10 which is hooked or sewn to the saddle on the right-hand side.



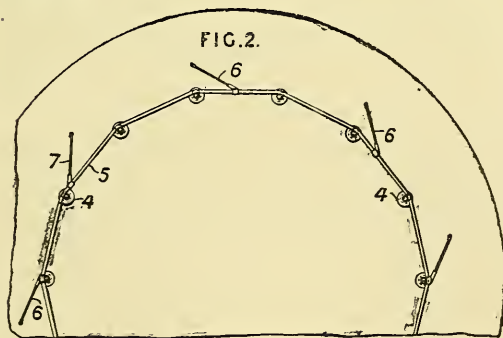
arranged on a circular track. The rope or band 5 is pulled round by a ridden horse or a motor car attached to a towing-strap &c. 7, and the horses attached to the hitching-straps 6 are thus led round at any required speed. In a modification, there are an inner and an outer circular row of posts carrying rails which form a circular track. Rollers on the ends of radial bars or axles run on the rails, and the hitching and towing straps are attached to the radial bars, which are separated by distance-rods to prevent the horses from running up to each other.

28,246. Freke, A. R. E. Hussey. Dec. 23.

Saddles.—A saddle numnah or pad, constructed to prevent galling of the horse's back, consists of two layers A, B of material, the upper one A being of buff or other pliable leather and being made longer in the direction of the girth than the lower layer B, which is of india-rubber, thus allowing an elastic play between the two. The layers are sewn together along seams f, f¹ and along the rear edges from g to h, and the girth straps J, K are attached at the points j, k.

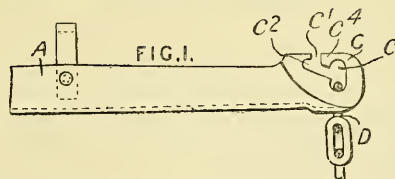


27,851. Johnson, J. Y., [Disston, W.]. Dec. 20.



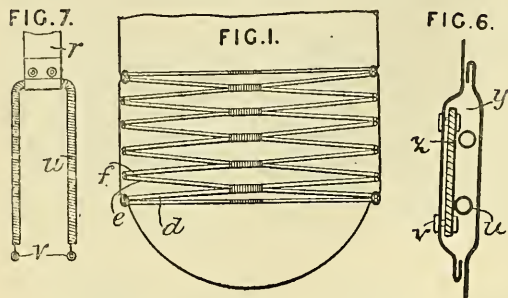
Training horses.—Apparatus for exercising a number of horses for cooling them off after a race &c. consists of hitching straps or ropes &c. 6 attached to a rope or band 5 which can run on rollers or pulleys 4 mounted on the tops of posts

28,243. Haiman, E. Dec. 23.



Fastening traces. A single-tree or double-tree is made by bending a metal plate to form a bar of U-section, and pressing the ends together and cutting them out to form hooks C for receiving the trace chains D. The eye c of the hook is connected with the opening c¹ by an inclined slot c² extending beyond the opening, and the point c⁴ of the hook is turned inwards to prevent the trace chain from becoming accidentally disengaged. The hook C may be formed from a separate piece of metal and riveted to the whipple-tree A as shown in Fig. 1.

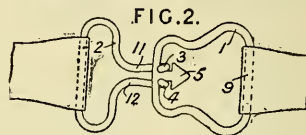
28,298. Fillâtre, P. F. L. Dec. 23.



Nosebags.—A nosebag is fitted with springs so that it extends to its full length when full and gradually contracts as the food is consumed, thus keeping the food always within reach of the animal's mouth. The bag may be of impervious material so that it may serve as a pail. In one arrangement, the springs consist of rings *d*, *e*, *f*, Fig. 1. In another arrangement, coil springs *u*, Figs. 5, 6, and 7, are bent double and attached at the top to the straps *r*, *s* and at the bottom by eyelets *v* to the side of the bag. The springs *u* are enclosed in pockets *y*

at the seams of the bag. The pockets may be strengthened by strips *z* of leather or the like.

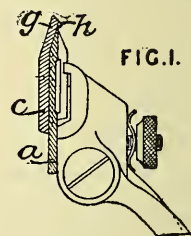
28,739. Weegar, P. L. Dec. 29.



Fastening.—The fastening consists of two parts 1, 2 made of spring steel. The part 1 is a continuous ring formed with a straight bar 9, for attachment to the harness strap, and an inwardly-projecting spear head 5. The other part 2 is formed with two parallel legs 11, 12 terminating in hooks 3, 4 adapted to form a spring connection with the spear head 5 as shown. The parts are disconnected by turning the part 1 at right-angles to the other part.

29,009. Scharff, E. Dec. 30.

Horse clippers and the like are provided with an accessory comb-plate *c* with a sloping upper surface to fit closely against the bevel of the ordinary comb-plate *a*. Guide-lugs for securing to the clipper are formed both on the flat part *c* and on the sloping part *g* of the accessory comb-plate, and each tooth terminates in a small nose *h*.



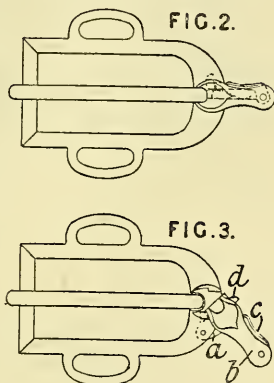
APPENDIX.

The following abridgments should be added to those appearing in the volume of this Class for the period A.D. 1877-1883.

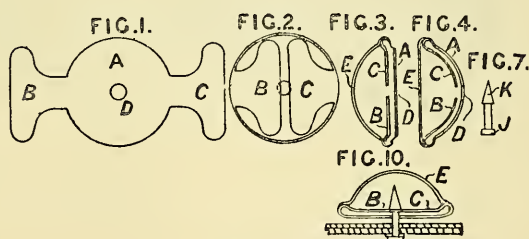
A.D. 1877.

187. Wilkins, R. H., [*Wilkins, H. St. C.*].
Jan. 15.

Fastening traces, pole chains and straps, &c., buckle attachments for. The end of the tongue of the buckle may be slipped through an opening in the buckle frame, thus releasing the connecting strap or fastening. Figs. 2 and 3 show the arrangement. A plate *a*, pivoted to the buckle frame and provided with a lever *b*, retains the end of the tongue in its normal position. The spring catch *d*, pivoted to the lever *b*, takes into a recess in the buckle frame and holds the plate in the closed position. By depressing the spring *c* of the catch *d*, and moving the plate *a* on one side, the tongue passes through the opening in the buckle frame, and the strap slips off its end.



the button is formed of a disc *A* slightly less in diameter than the button shell. The disc is perforated at *D* to receive the end of the securing-shank and at its sides are lugs *B*, *C* which are



folded over to form spring lugs covering, or nearly covering, the hole *D*. A flat or curved face piece or shell *E* is fixed to the back *C*, as shown in Figs. 3 and 4. The securing shank or pin has a conical point *K* and a flat head *J*, as shown in Fig. 7. To fix the button, the shank is passed through the material and into the central hole in the button, the spring lugs locking behind the shoulder of the conical point. To prevent the button from turning, two shanks or a double staple-shaped shank may be used. A rubber washer may be placed between the shank head and the material. For studs used for saddlery and like purposes, the shank is provided with a conical point at each end to receive a head or button. The back of the button may be formed with more than two spring lugs.

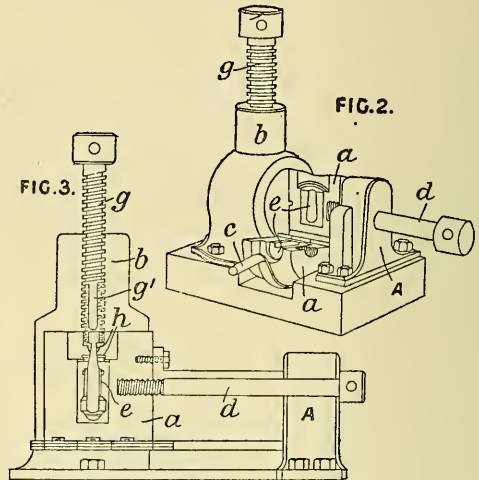
4126. Newton, H. E., [*Burtey, H.*].
Nov. 6.

Fastenings, buttons and studs for. The back of

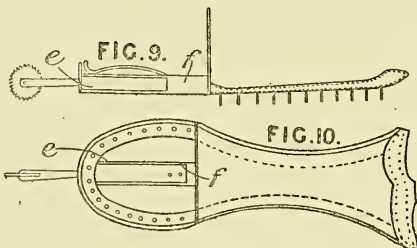
A.D. 1878.

1126. Crees, T. W. March 21.

Whips.—Relates to a method of shaping and ornamenting gold, silver, German silver, brass, copper, Britannia metal, or other metals or alloys to produce whip mounts and collars. A mould *e*, Figs. 2 and 3, of the mount &c. is made in two or more parts in a circular block *a*, which is carried by a screwed rod *d* supported in a frame *A*. The block is advanced within the framework *b*, which carries a screw *g* for operating a plunger *g'*, and the mould is filled with water or other liquid before the metal blank is inserted. A washer *h* prevents the escape of liquid when the plunger is forced down, and the compressed liquid presses the blank to the configuration of the mould. The article is removed by withdrawing the block and opening the mould, a lever *c* serving to support one half of the opened mould.



1659. Champomier, G. April 25.



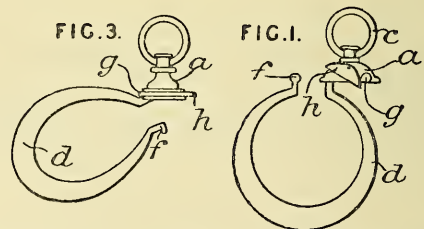
Spurs and spur-carriers.—A spur, Figs. 9 and 10, without side branches, is applied to metal cambering extending beneath the heel and sole of a boot, the part *e, f* which passes through the heel being either solid or partly hollow and provided with a spring.

3600. Frankham, W., and Birch, J. Sept. 11. [Provisional protection only.]

Fastening backbands, traces, &c. A box tug for fastening a backband, trace, or other harness strap consists of a hollow socket with a pin or buckle tongue projecting upwards from the bottom under the sliding or hinged cover. The socket is fixed on

the usual tug loop, and the strap is fastened by placing it in the socket with the tongue engaging in a hole in the strap and then closing the cover. In the event of an accident &c., the strap is slipped by opening the cover and freeing the strap from the tongue. A screw pin may work through the cover on to the top of the tongue.

4069. Winkles, T., and Moxon, T. Oct. 14.



Fastening; dog chains.—A swivelling fastening, applicable for harness, dog and other chains, and like purposes, consists of a base-plate *a*, Fig. 1, free to move on a ring *c* and carrying a swivelling loop or hook *d*. The free end of the hook has a projection *f* which engages a recess *g* formed in the

plate *a*, and is secured therein by means of a pivoted plate *h*. In a modification, shown in Fig. 3, an oval loop *d* can turn so that the projection *f*

engages a groove in the body *a*, and is secured therein by means of a rotating ring *g* formed with a loop *h*.

A.D. 1880.

3394. Villiers, P. de. Aug. 20.

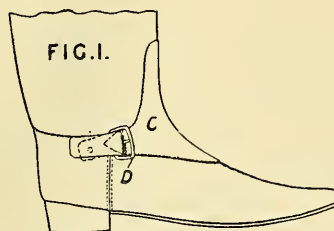
Bits.—Bits and other articles are coated with an inoxidizable alloy and the like, formed of tin, lead, and silver, 1 or 2 per cent. of silver, and 9 or 18 per cent. of lead being preferably used. In some cases the silver is omitted. The lead is added in a granular condition to molten tin, and fused silver is then run into the mixture. Articles to be coated are first immersed in an acid bath, and, after drying, plunged into the molten alloy. After removal,

they are plunged in water or otherwise treated for restoring the temper, and then polished. They may be further treated, to render them proof against vinegar, acids, &c. by an amalgam composed of 60 parts of mercury, 39 parts of tin, and 1 part silver. The polished articles are lightly rubbed with the amalgam by means of a cloth which has been impregnated with a solution of saltpetre and then dried. The articles may further be coated with silver or gold by electrolysis.

A.D. 1881.

2024. Nicolson, M. May 9.

Spur-carriers.—A cavalry boot, made with a tightening-flap *C*, fastened by a buckle *D*, is provided with a perforated leather slip, attached to the buckle, for the reception of the outer spur stud, and the end of the flap *C* on the inner side is extended and perforated to receive the inner spur stud. *D*-pieces may be used instead of the perforated leather slips.



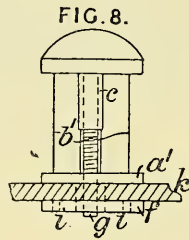
A.D. 1882.

336. Lyon, T. S. Jan. 23. [*Provisional protection only.*]

Whip-hanging devices.—Brackets for whips &c. have the front portion tightly pivoted to the back, so that it may swing with a pendulous movement only, and will not fall from the position in which it is placed.

2589. Wirth, F., [*Hunrath, L. E. E.*]. June 1.

Fastening.—Relates to screw buttons or studs for saddlery &c. A circular base-plate *a'* has extending from it two bars *b'* connected by a screw socket *c*, into which is screwed the stem of a button, as shown. The plate *a'* has also a screw-rod *g*, which is passed through the material *k* and on to which a disc *f* is screwed by means of a key received in holes *i*.



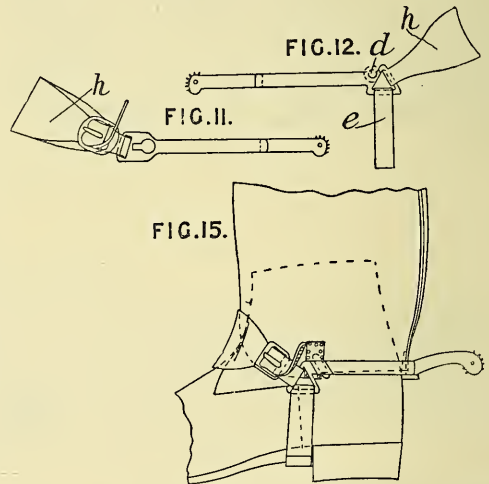
3648. Redfern, G. F., [*Henderson, E. C. C., and McDonald, T. A.*]. Aug. 1.



Fastening, lacing-fastenings for. Relates to means for securing the free end of the single lace which is sometimes used for fastening boots and parts of harness. The free end *F* of the lace, in the case of a boot fastening, is passed over the top

of the boot and is then laced through three apertures *a, b, c* in one of the flaps *B* which are drawn together. The end of the lace is finally passed under the part between the apertures *a, b*, and drawn tight.

6090. Hemming, F. W. Dec. 20.



Spurs and spur-carriers.—In a legging and boot for cavalry and other horsemen, the spur is supported by a roll of leather or a metal piece at the back of the legging, the prongs of the spur being attached to buttons or studs on the sides of the legging. The prongs cover the joint between the boot and the legging. One or both prongs may be provided with an eye having an aperture at one part through which is passed the neck of the stud, or rings which fit over the studs may be attached by a swivel joint to the prongs. In another arrangement, each prong is provided with a hole and slot for the stud. One end of the instep strap *h*, Fig. 11, is sewn to an inclined bar at the end of a prong, the buckle for the other end of the strap being similarly secured to the other prong. The prongs may also be formed with a notch *d*, Fig. 12, which fits under the stud. The ends of the prongs have triangular holes. The metal round the hole forms two inclined bars, to which are attached respectively the instep strap *h*, and a

strap *e* which passes under the waist of the boot. In a modification, the notch is replaced by button-holes in the instep strap. The instep strap may be attached to swivelling bars carried by the prongs. In another arrangement, a socket on the prong fits on an inclined finger carried by a plate which is secured to the legging, as shown in Fig. 15. The

finger is inclined downwardly to the rear, so that on tightening the straps, the spur is pulled into position. In another arrangement, the spurs are formed as usual, with studs for the attachment of waist and instep straps, and the spur is prevented from riding up by boxes, secured to the legging, which receive the front ends of the prongs.

A.D. 1883.

862. Jack, C. Feb. 16. [*Provisional protection only.*]

Grooming-pads.—Pads for cleaning horses are constructed with a reservoir to hold the cleansing or other material, which can be discharged as required by pressing a spring to open a valve. The pad may be mounted on a screw ring and screwed to the end of a flexible hose pipe, which is connected to a stand-pipe and provided with a valve.

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CHANCERY LANE, LONDON, W.C.

1906.

PATENTS FOR INVENTIONS.

ABRIDGMENTS OF SPECIFICATIONS.

CLASS 62,
HARNESS AND SADDLERY.

PERIOD—A.D. 1905-8.



LONDON:
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EXPLANATORY NOTE.

The contents of this Abridgment Class may be seen from its Subject-matter Index. This Index is in accordance with the *Abridgment-Class and Index Key* (REVISED EDITION, 1910), but owing to certain variations that have been made in the scope of the Abridgment Classes since the earlier sheets were printed, some additional Index subheadings (indicated by an asterisk) have been employed. For further information as to the classification of the subject-matter of inventions, reference should be made to the above-mentioned *Abridgment-Class and Index Key* (price 1s., by post 1s. 6d.), published at the Patent Office, 25, Southampton Buildings, Chancery Lane, W.C.

It should be borne in mind that the abridgments are merely intended to serve as guides to the Specifications, which must themselves be consulted for the details of any particular invention. Printed Specifications, price 8d., may be purchased at the Patent Office, or ordered by post, no additional charge being made for postage.

SUBJECT-MATTER INDEX.

Abridgments are printed in the chronological order of the Specifications to which they refer, and this index quotes only the year and number of each Specification.

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24,668
Wolff, W..... '08. 19,633
Wright, C. E..... '06. 4345
Wulf, P. '06. 27,376
- Youngstown Pressed Steel Co.*
'08. 6582

ERRATA.

The following abridgments should be *deleted*, as their subject-matter is now excluded from the contents of this Class by cross-reference :—

A.D. **1905.** Nos. 10,730. 17,582. 19,807. 27,099.

A.D. **1906.** No. 23,008.

A.D. **1907.** No. 6519.

A.D. **1908.** Nos. 10,713. 11,168.

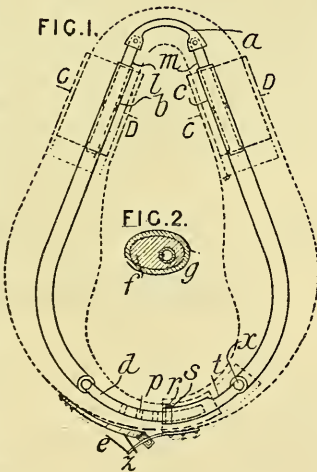
HARNESS AND SADDLERY.

Patents have been granted in all cases, unless otherwise stated. Drawings accompany the Specification where the abridgment is illustrated and also where the words *Drawings to Specification* follow the date.

A.D. 1905.

49. Ahrendt, J. Jan. 2.

Collars, neck; fastening.—The collar can be adjusted in length and breadth by means of jointed hame-tubes embedded in the padding *f*. The bolts *l*, *m*, jointed to a bow *a*, can be secured in different positions in the Mannesmann tubes *b*, *c* to vary the length of the collar, the padding *f* and leather cover *g* being divided at *C D* to permit of this adjustment. The tubes *b*, *c* are jointed to pieces

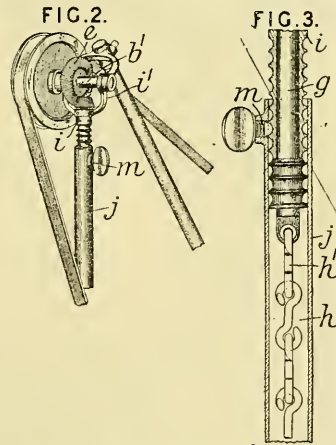


d, *t*, which slide one within the other to allow of the variation of the breadth of the collar, which is divided at the bottom. The pieces *d*, *t* can be locked in position by a pin *r* passing through holes *p*, *s* therein. The pin is mounted on one of the straps *e*, which can be fastened by a buckle *z*.

377. Warren, H. C., Brown, L. C., and Brown, C. R. Jan. 9.

Horse-clippers and the like.—The spindle *g*, Fig. 3, connected to the end of a flexible shaft *h* for driving horse-clippers, is carried in a long bearing-sleeve *i*, which is suspended from the shaft *b*,

Fig. 2, of the bevel driving-wheel *e* by a pair of arms *i*, so as to allow angular movement around the shaft *b*'. The other end of the sleeve *i* is grooved and telescopes into the tubular termination *j* of

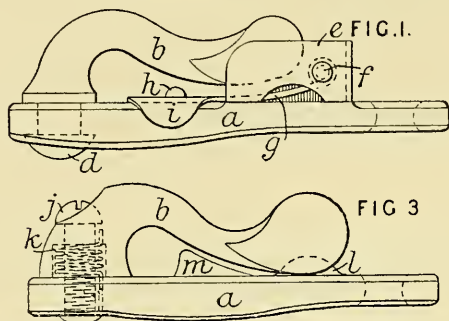


the shaft covering, where it is secured by a set-screw *m*, thus allowing rotation and also adjustment to compensate for stretching and wear of the flexible shaft, which consists of a chain made up of loosely-jointed links *h*, Fig. 3.

477. Bezer, H. Jan. 10.

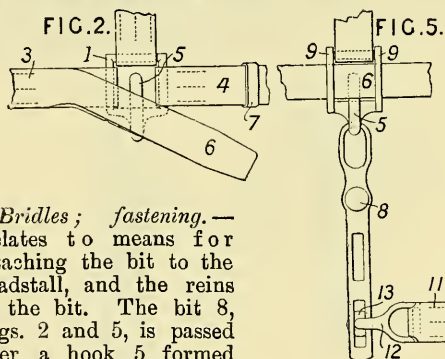
Fastening.—A slip-hook for traces and breast chains of harness, &c., capable of release under tension, consists of a part *b*, Fig. 1, pivoted on a pin *d* to the body *a*, and retained in the closed position by a U-shaped piece *e*, pivoted on the pin *f*

carried by the spring *g*. The part *e* is turned upwards at right-angles to release the hook. Lugs *i* on the spring *g* prevent it from rotating on the rivet *h*. The locking-piece *e* may be pivoted



directly to the body *a* of the hook. Fig. 3 shows a modification in which the part *b* is held against the stop *l* by the spring *k* surrounding the screw *j*. The projection *m* prevents any swinging of the eye from opening the hook. The shank of the part *b* is eccentric to the screw *j*, so that the opening of the hook is accompanied by a slight relief of the tension.

1410. Maxwell, H. M. Jan. 24.



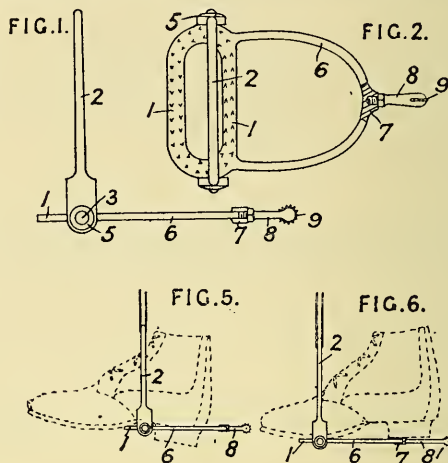
Bridles; fastening.—

Relates to means for attaching the bit to the headstall, and the reins to the bit. The bit 8, Figs. 2 and 5, is passed over a hook 5 formed on a usual "square" 1 of the headstall, and is held in place by the free end 6 of the front noseband 3, which passes over or under the hook 5 and is connected to the back noseband 4 by a loop 7, buckle, or button. To prevent lateral motion of the noseband, the corners of the square 5 are raised, and such corners may be connected across to form loops 9 through which the end 6 is passed. The reins 11 are connected to the bit by special devices 12 which have enlarged heads 13, the free ends of the reins being passed through the slots in the bit and then buckled together. The two arms of the piece 12 may be connected across by a bar having projecting ends, instead of being formed into the head 13.

1709. Lindsay, H. St. G. Jan. 28.

Stirrups; spurs and spur-carriers.—A combined safety stirrup and spur consists of a tread 1 provided with pivots 3 which pass through eyes at the

bottom of the usual bow 2 and are riveted over washers 5. A bow-shaped heel-piece 6 is formed integral with the tread 1, and has a socket 7 at the rear end which is adapted to receive a screwed fitting 8 carrying a rowel 9. In active service, the heel of



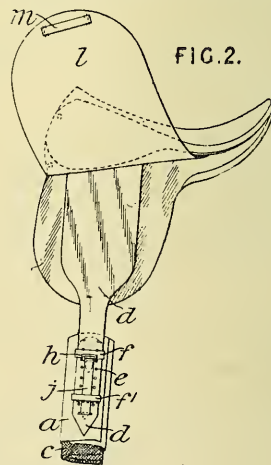
rider's boot is placed within the heel-piece as in Fig. 5, while for parade purposes, the heel may rest on the socket 7, as in Fig. 6, a longer rowel fitting 8¹ being provided so that the rowel is clear of the boot. If the rider should fall, the heel-piece 6 will turn on its pivot and aid in the release of his foot; as a further aid, the bow 2 may be made higher than usual. In modifications, the tread may be pivoted on a pin passing through it, and the rowel fitting may be formed integral with the heel-piece.

1945. Richards, J. W. Jan. 31.



Saddles; fastening.—

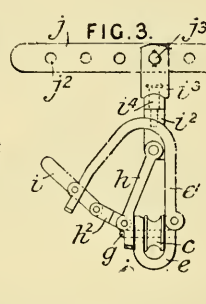
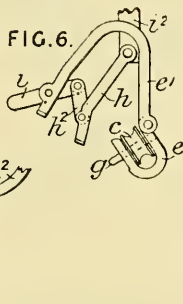
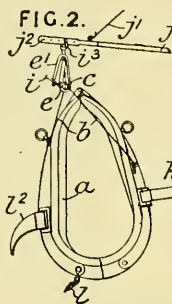
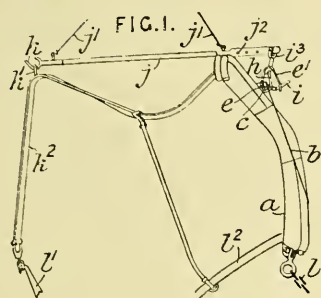
The girth *a* comprises a folded strip of leather enclosing a folded woollen lining *c*; it may be fastened with the usual buckles or with the fastening shown. The lining retains the dubbing or other dressing and feeds it to the leather. The fastening comprises guide-loops *f*, *f*¹, secured to the girth by a leather strip *g*, the loop *f* carrying a fitting *h* formed with a pair of



tongues *i* adapted to engage in two rows of holes *c* in the girth strap *d*, which conveniently replaces the usual sweat flap. The fitting *h* can be tilted,

to cause the tongues to enter the holes, by pulling on a strap *j*. The flap *l* is held down by passing the strap *d* through a loop *m*.

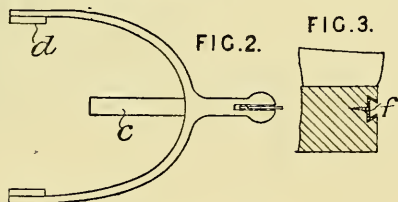
2256. Knight, H. Feb. 4.



Suspending-arrangements for.—In a suspending-device for harness used in connexion with fire-engines, ambulance vehicles, &c., where rapid hitching-up is required, a rod *j* is suspended by cords or wires *j*¹ which pass over a pulley fixed to the ceiling and carry a counterweight at the free end. The rod *j* is provided at one end with a hook *k* to which is attached a ring *k*¹ on the outer trace *k*² of the harness, and at the other end with a slipping-device *e*¹ the forked end *i*¹ of which is attached by a pin passing through one of the holes *j*² in the rod *j*. The fastening *e*¹ has hinged to its lower end a U-shaped piece *e* which carries a pulley *c*, over which passes a cord *b* attached to the hinged collar *a* of the harness. The pin *g* of the pulley *c* is normally supported in a hole at the bottom of a pivoted arm *h*, but when the arm *h* is displaced as shown in Fig. 6, by pulling a lever *i* connected thereto by a link *h*², the pulley *c* drops

and releases the collar *a*. The rod *j* is then so tilted by the effect of the counterweight as to cause the ring *k*¹ to slip from its hook *k*, and so release the whole harness. The inner hame of the collar *a* is connected by the usual chain *l* to the pole of the vehicle, and the traces *k*², *l*² to the ends of the whipple-tree *l*¹. The collar *a* is closed round the horse's neck before the harness is released. The parts *i*², *i*³, Fig. 3, of the fastening *e*¹ may be connected by a screwed swivel-pin *i*⁴. In a modification, the lever *i* is replaced by a pulley over which passes a cord connected to the pivoted arm *h*. In either case, the cord which effects the release of the pulley *c* may be connected to the doors of the station so as to be pulled when the doors are opened, or to some point such that the pulley is released when the collar is drawn over the horse's neck.

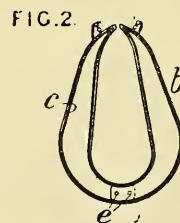
2308. Bruchhorst, H. Feb. 6.



Spur-carriers.—For attaching a spur to the boot heel, it is provided with projections *d*, which are of dovetailed cross-section and are slid into corresponding grooves *f*, fastened in each side of the heel by screws, the tongue *c* being secured in a box in the heel by a spring therein as usual.

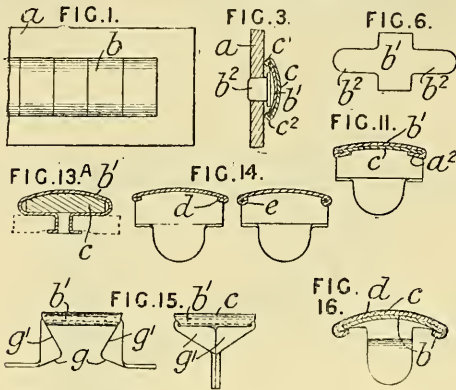
2468. Hull, J. S., and Morland, E. T. Feb. 7.

Collars, neck ; pads for.—The collar is padded with two rubber air cushions *c*, shaped to the outer casing *b* and having solid rubber extensions which overlap at the bottom of the collar and are formed with eyelet holes *e*. Each pad should be formed of two rubber



sheets cemented along their edges and bound with rubber or other strips. The outer casing *b* is preferably of leather or canvas, and may be waterproofed. To place the pads in position, a cord is introduced, by a packing-needle or otherwise, into the bottom of the casing and passed out at the top and connected to the eyelet hole *e* of the pad, which can then be drawn into the casing.

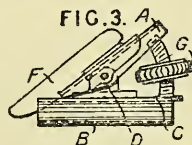
3018. Richards, J. Feb. 14.



Bridles; ornaments.—The fronts of the component plates of harness and bridle chain-trimming described in Specification No. 11,415, A.D. 1893, are strengthened by facing, backing, or filling them with metal or other substances which are secured to the plates. The plates *b*, Fig. 1, which are attached to the brow-band *a* are formed with flanges *b*², Fig. 6, which are turned back and inserted in holes formed in the brow-band. The front part *b*¹ of the plate may be strengthened by a plate *c* of superior metal which is secured to the front *b*¹ by bending over the edges *c*¹, *c*², Fig. 3. The plate *c* may be secured at the back of the front *b*¹, Fig. 11, by turning in the edges *a*², or in place of the plate a piece of wood or other substance *c* is inserted as shown in Fig. 13A. The front *b*¹ may also be strengthened by turning in the edges at the side as shown at *d*, *e*, Fig. 14, or the part *b* is formed with flanges *g*, Fig. 15, which are turned under so that the edges *g*¹ support the front *b*¹ and the facing *c*. Fig. 16 shows a modification in which the facing *c* is encased with silver *d* or the like.

3108. Burnell, W., and Murfin, J. T. Feb. 15.

Horse-clippers and the like.—An auxiliary comb-plate *A* is pivoted to a frame *G*, which can be detachably fixed to the clipper by means of the turned-over edges *B*. The comb-plate *A* is carried by two supports *D* on the frame *C*, and the teeth *F* are normally pressed against the frame *C* by a spring. A nut *G* regulates the extent to which the teeth *F* can be separated from the cutting-plate.

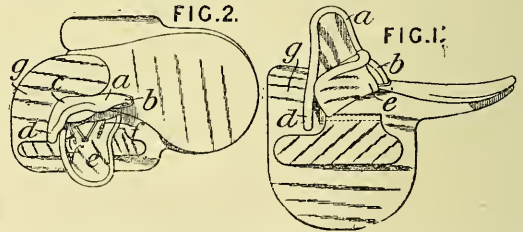


3673. Spencer, T., and Spencer's Dovetail Heels, Ltd. Feb. 22.



Saddles; horse-boots.—Relates to a non-slipping tread or surface for the soles and heels of boots and shoes, applicable also to saddle flaps and foot coverings for animals, and for other similar purposes. The tread is made of leather, which is perforated to receive a number of rubber studs *A* connected to or formed in one with a backing *A*³. The necks of the studs are narrower than the main body portion, so as to allow greater flexibility, and, preferably, they are not vulcanized to the same extent as the other parts of the studs. The studs are pointed for convenience in threading them through the perforations in the leather, but afterwards they may be cut down to any desired extent. The studs closely fit the perforations in the leather to render the tread water-tight. Instead of all the studs being backed by one piece of material, they may each have a separate backing, or two studs may be fitted to the one backing.

3702. Richards, J. W. Feb. 22.

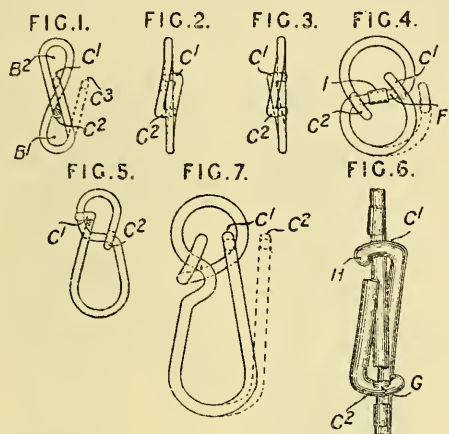


Saddles, side. To increase the grip of the rider on a side saddle, the pommel *a* is formed with gripping-surfaces for the thigh by extending it at *b*, *c*, as shown in the plan view, Fig. 2, and for the calf by extending it downwardly at *d*, and the leaping-head *e* meets the calf grip *d* in front, but is held away from the rear part of the pommel by straps *f*, thus forming a springy grip. The head *e* is screwed into the tree as usual, and the straps *f* are attached to the tree and pass through the flap. The safe *g* is cut so that its inner edge passes beneath the calf grip and is fixed to the under part of the tree, to allow the leg of the rider to lie close down on the horse's shoulder.

3811. Bryant, C. Feb. 23.

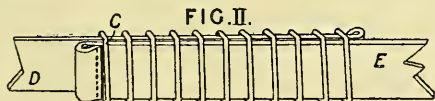
Traces; fastening.—Relates to improvements in the coupling-link or hook described in Specification No. 2591, A.D. 1902, [Abridgment Class Chains &c.]. The links may be used in the construction of curb, trace, and other chains and hooks for harness. Either of the bent ends *C*¹, *C*², Figs. 1 and 2, may be disengaged from the

corresponding loop B¹, B³ and allowed to spring into the position C³. The bent ends may be formed with projections II or recesses G, as shown in Fig. 6. In the modification shown in Fig. 4, one



or more stops I are placed on the centre piece F to engage with the pieces C¹, C², and thus stiffen the link when under tension. Figs. 3, 5, and 7 show other modifications of the improved link. The improved spring ends C¹, C² may be applied to any of the forms of link described in the prior Specification. The links may be so arranged that only one loop can be opened.

4017. Harse, R. C. Feb. 27.

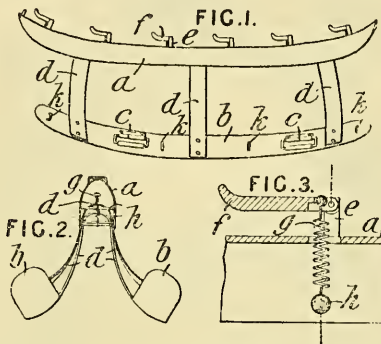


Traces.—A belt, strap, or band is made extensible by passing two ends D, E, Fig. II, in opposite directions through a flat spiral spring C. The ends are attached to the ends of the spring, or have projections sewn on to them, so that they compress the spring when the ends are pulled apart. The Provisional Specification states that the device is applicable to harness traces.

4037. Schouboe, J. T. S. Feb. 27.

Saddles, pack. A frame for a packsaddle, designed to facilitate loading and unloading and to distribute the load evenly on the animal's back, comprises an arched middle tree *a*, which is curved longitudinally in the opposite direction to the curve of the arch, connected, by bent iron straps *d*, to side trees *b* which rest on the back of the animal. The side trees are stitched into pads or flaps of leather or the like, and carry clips *c* for the girths. The articles forming the load are slung, preferably

in pairs, over the middle tree, and rest on the pads or flaps. The two articles of a pair may be connected by a leather strap secured in position by a fastening. The fastening shown comprises a



tongue *f*, pivoted between posts *e*. The tongue can be raised to a vertical position to take the ring of the connecting-strap, and is held in the position shown, to retain the strap, by a spring *g* secured to a bolt *h*. The load may be held down by straps fastened by clips *k*.

4514. Parnell, F. W. March 4.

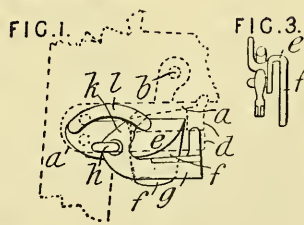


Hunting-crops.—Flexible hunting-crops and the like are constructed with a core *a* of steel, cane, or other suitable material, covered with two layers *b*, *c*, the inner of which may be hemp, flax, cotton, &c., and the outer of plaited whip cord, twine, catgut, &c.

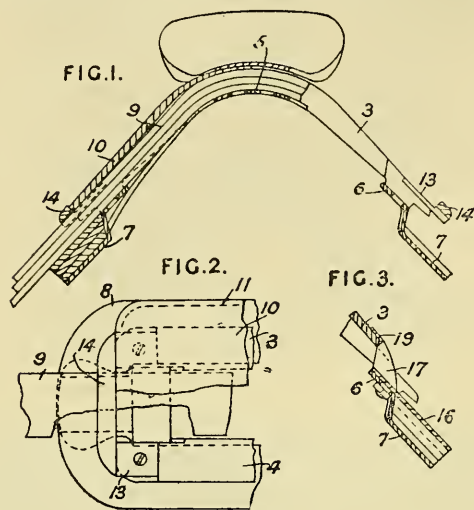
[Reference has been directed under Patents Act, 1902, to Specifications No. 290, A.D. 1890, No. 2183, A.D. 1895, and No. 1855, A.D. 1902, [Abridgment Class Umbrellas &c.].]

4724. Betts, A. P. March 7.

Stirrup straps, suspending.—A safety saddle-bar *e*, of the form in which the arm *g* can turn on a staple *h* fixed to the body of the bar, the finger *k* working under a guide *l*, is attached to an ordinary saddle-bar *a* by a hook *f* formed integrally with or secured to the safety saddle-bar. The spring member *d* of the ordinary saddle-bar is released to allow the hook *f* to be placed in position on the saddle-bar.



5591. Theobald, G. J. July 25, 1904, [date applied for under Patents Act, 1901].

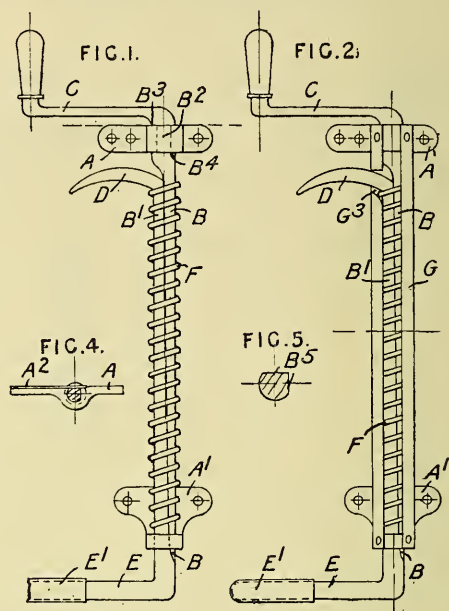


Saddles.—Harness saddle-trees are constructed to provide a flat bearing for the backband on the skirt and the bottom of the channel in the saddle, so that bends in the backband are avoided. The saddle-tree, which is preferably of aluminium, comprises sides 3, 4 connected by sunken bridges 5, 6 over which the backband 9 slides. Projecting from each bridge 6 is a seat 7 for the skirt 8, the seat being offset from the bridge so that the tops of the skirt and bridge are in the same plane. A cover 10 for the backband channel is sewn at its edges 11 to the skirt 8. At the ends of the cover are brass or other tips 14 connected to the sides 3, 4 by arms 13. A modified tip, Fig. 3, adapted to be secured to the bridge 6, comprises a base 16 and side pieces 17, the side pieces engaging recesses in the sides 3, 4 and being connected by a cross-piece 19, forming an opening through which the backband extends.

5713. Gardner, E. L., and King, F. W. March 18.

Rein-holders; stopping and controlling restive animals.—A rein-holder consists mainly of a hooked spindle which is arranged to slide vertically in brackets fixed to the vehicle and is provided at its lower end with an arm which may be rotated by the driver into such a position that it will engage with the wheel spokes, so that, if the horse should move forwards, the arm is moved downwards and the reins are pulled tight; also the arrangement is such that if the horse moves backwards the wheel will be skidded by the arm between the spokes. The spindle B^1 , Figs. 1 and 2, with its hook D and arm E bears in a bracket A^1 and is mainly semi-cylindrical, having its flat side bearing against the flat surface of another similar spindle B, the lower end of which also bears in the bracket A^1 . The

upper end of the spindle B is provided with a bearing-surface B^2 which presents shoulders B^3 , B^4 on either side of another bracket A. A handle C is provided on the spindle B whereby the arm E



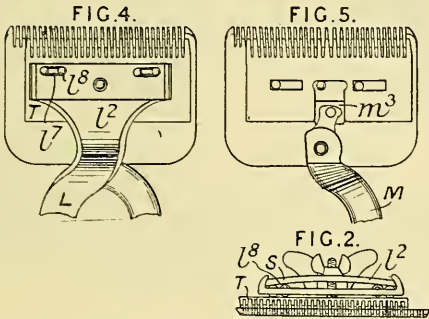
can be rotated into or out of its operative position. A spiral spring F encircles the spindles B, B^1 and bears against the hook D and bracket A^1 , and the hole is enclosed in a cylinder G, slotted as shown to allow for the operation of the hook D. The reins are passed under the hook D and attached to another hook fixed to the vehicle just behind the apparatus. The arm E has a leather covering E^1 to prevent abrasion of the wheel spokes. The bearing-surface B^2 of the spindle B is formed with two flat surfaces B^5 , Fig. 5, one or other of which is held by a spring A^2 , Fig. 4, fixed behind the bracket A, according as the apparatus is in the operative or inoperative position. In a modification, the apparatus is held in the inoperative position by forming a recess at the end of the cross-slot G^3 , Fig. 2, into which the hook D fits, or by making that slot inclined.

5965. Sine, W. R., and Rosenthal, J. S. March 21. Drawings to Specification.

Materials; bridles.—Hard rubber is combined with a textile fabric in the manufacture of blinkers for horses, and harness medallions and rosettes. The interstices of the fabric are filled with a hard-rubber compound, by applying the compound and passing the fabric between steam-heated rolls, which temporarily soften the compound and force it into the fabric. Blanks shaped to form the article are then cut out of the impregnated fabric, several layers being used if necessary. A coating of hard-rubber compound of sufficient thickness to form the finished article is then

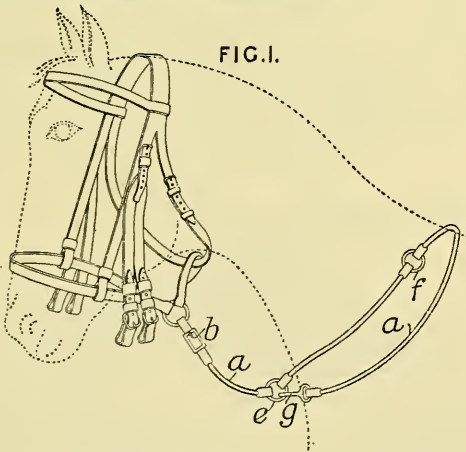
applied to the blanks, and the whole is placed in a mould, pressed in order to unite the rubber into one homogeneous mass, and afterwards vulcanized. By this process the fabric is embedded in the rubber, which does not tend to strip off in layers, as in the cases where it is simply coated on the fabric.

6562. Mitchell, H. March 28.



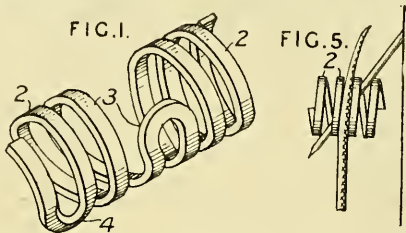
Horse-clippers and the like.—In hand-clippers, balls 1⁸ are mounted in an extension l² of the fixed handle L, and are pressed down on to the traversing-plate T by a spring cover-plate S, adjusted by the wing-nut. The slots or circular holes l⁷ containing the balls have slightly tapered sides, so that the balls cannot fall through if the handle L is removed. A square piece m³, Fig. 5, is mounted at the end of the operating-lever M to prevent wear.

6600. Dawes, J. A. March 28.



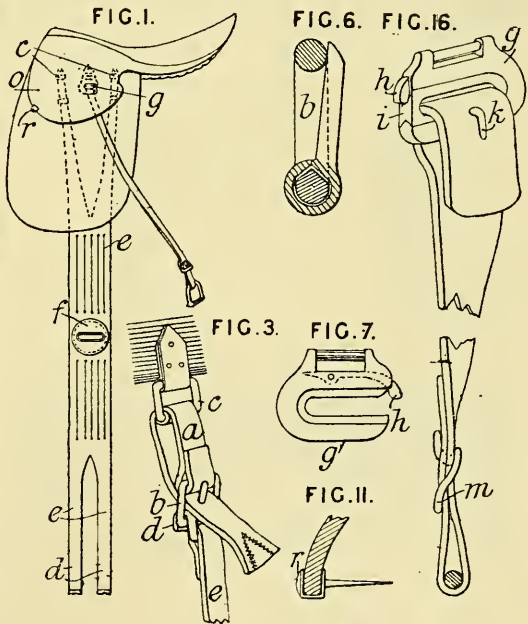
Tethering animals.—A tether rope a for horses &c. is connected at one end by a buckle b to the bridle, and is provided with rings e, f to which the end g of the rope may be fastened. When the tether is required, the spring hook g is released from the ring e and the tether is attached to a suitable object by connecting the hook g to the ring f.

6643. Flanigan, J. D. May 20, 1904, [date applied for under Patents Act, 1901].



Whip-hanging devices.—The device comprises coils 2, between the convolutions of which the lashes of the whips are forced, and loops 3, 4, by either of which the device can be hung from a rail, a limb of a tree, or the curtain button of a buggy. The loops are sometimes dispensed with, Fig. 5. The coils are preferably made to fit the stock of a whip, so that the device can be carried thereon when not in use.

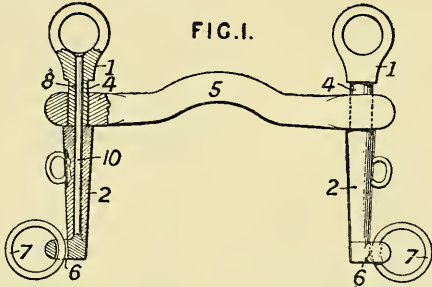
7296. Vigier, A. April 8, 1904, [date applied for under Patents Act, 1901].



Saddles; fastening; stirrup straps, suspending.—Relates to girths, stirrup straps, saddle-bars, and fastenings. Three loops are fitted at each side of the saddle, the two outer loops being for the girth leathers while the middle one serves for the attachment of the saddle-bar. The girth leather a, Fig. 3, is secured to a buckle b, and, after passing through a loop c on one of the loops referred to above, is fastened by the buckle b. The girth e is connected to the buckle b by a hook d, so that the girth is tightened by pulling on the girth leather a.

The tongue of the buckle *b* is formed on a sleeve, Fig. 6, fitting over a bar of the buckle which has a triangular part to bring the tongue into the buckling position. The tightening of the girth can be facilitated by placing the fingers through a boss *f* thereon. The safety saddle-bar comprises a block *i*, Fig. 16, to which the stirrup strap is attached, and which is slid into a carrier *g*, Fig. 7, and retained therein by a spring *h*. The saddle flap is recessed to receive the carrier *g*. A single stirrup strap, Fig. 16, is secured by a hook *k* on the block *i*, and its end is bent up and fastened with a special fastening *m* to take the stirrup. A double stirrup strap has both its ends engaged by a hook on the block *i*. The small flap *o* of the saddle is prevented from rising by a tack *r*, Fig. 11, the head of which receives the edge of the flap. The Specification in the original form, as published under the Act of 1901, comprises also the following modifications which do not appear in the Complete Specification as accepted: a modification of the buckle *b*, Fig. 3, in which it has a toothed tongue and is connected to the girth *e* by a loop; a modified carrier *g*, Fig. 7, combined with the modified buckle *b*; and modifications of the fastening *m*, Fig. 16.

7654. Beard, F. J., [*trading as Brodhurst & Co., V.*]. April 11.

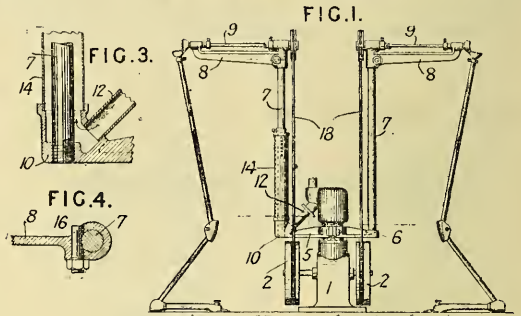


Bits.—The side bars of a polo or hunting bit are formed of two or more castings 1, 2, of nickel or other non-rusting metal, which are soldered together after the narrowed part 4 has been passed through the eye of the mouthpiece 5. The castings are made with a longitudinal hole 8, into which is fitted a steel or iron bar 10 having at its bottom end an eye 6, through which passes the rein ring 7.

8302. Stewart, J. K. April 18.

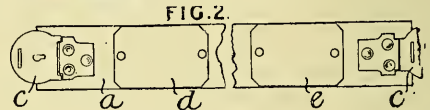
Horse-clippers and the like.—Relates to substantially portable apparatus comprising a motor and a frame for power-transmitting mechanism adapted especially to flexible-shaft apparatus for driving hand-directed tools, such as animal shears &c. To an ordinary gasoline or other explosive or expansive fluid engine 1, Fig. 1, is secured a frame 5, 6, to which are secured uprights 7 which carry outstanding arms 8, which may be swung round into any position and fixed by tightening the

nuts on bolts 16, Fig. 4, recessed to fit against the upright 7. One part 5 of the frame has a hollow elbow 10, into which the upright 7 is screwed, the engine exhaust passing through a



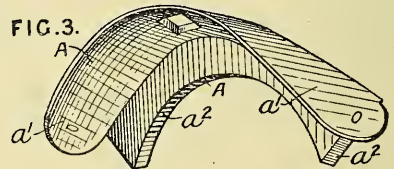
channel 12 into the elbow 10 and thence into a perforated silencer 14. Belts 18 transmit power from the engine fly-wheels 2 to shafts 9 carried by the arms 8, and thence to the tools &c.

8771. Katz, A. D. April 26.

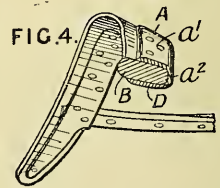


Dog collars; muzzles for animals.—To provide means for identifying strayed dogs and other animals, the lock used for fastening collars, muzzles, and the like is engraved or otherwise marked with a registered number, and, if desired, with the name and address of the owner of the animal. The lock may be such a one as that described in Specification No. 3789, A.D. 1902, [*Abridgment Class Fastenings, Lock &c.*]. The collar *a* is fitted with the lock *c*, and with plates *d*, *e* inscribed with a request to the finder of a strayed animal to return it to its owner or to send its registered number to a central registry.

9531. Russell, A. G. May 5.



Saddles.—The head of a riding or driving saddle-tree B, Fig. 4, is strengthened by an angle-iron &c. plate A, Fig. 3, having one flange *a'* fitting on the head and the vertical flange *a''* fitting against the back of the

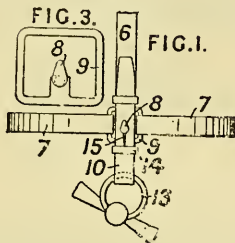


head. The ordinary gullet plate D is secured to the plate A by rivets.

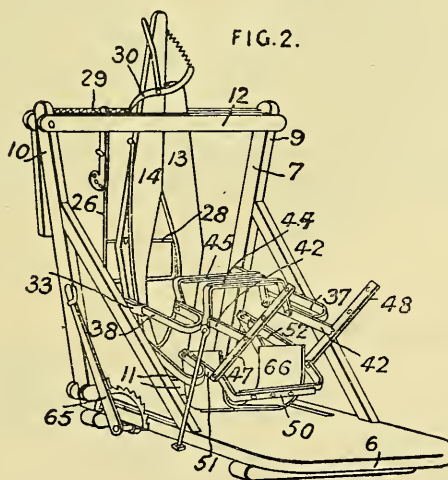
9613. Butler, E. R. May 8.

Bits; fastening.—

The bit ring 13 is secured to the cheek strap 6 and nose-band 7 of a head-stall bridle by a strap 10 fastened at one end to a square 9. The square is provided with a stud 8, Fig. 3, and the strap 10, after being threaded through the bit ring 13 and a loop 14, is hooked by means of a hole 15 on the stud 8.

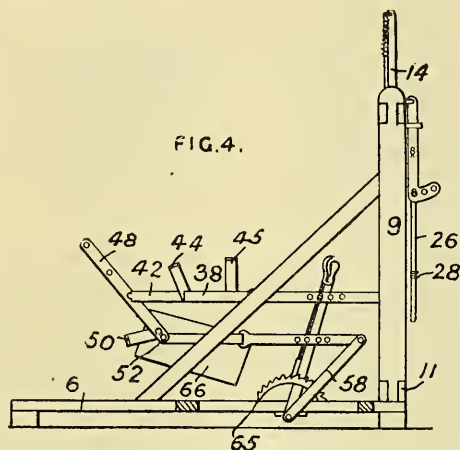


9647. Pentecost, J. L. May 6, 1904,
[date applied for under Patents Act, 1901].



Animals, stocks for holding.—An adjustable stock, for holding animals for ringing and branding, comprises a base 6 to which is attached a frame 7 so fixed by braces that it can fall down when not in use. The frame has double cross-pieces 11, 12, between which work neck yokes 13, 14 pivoted at the bottom and so connected that, when one is moved, the other moves in the opposite direction. By the application of a spring, the yokes tend always to close together, but means are provided for keeping them apart. The frame 26 depending from the upper cross-piece is so fixed that its motion away from the yokes releases the locking-arrangement and so determines the closing of the yokes, this being effected by the animal's nose on entering the yoke. A dog 30 attached to

the yoke, engaging in a rack 28, prevents the opening of the yokes. Pivoted on the side-pieces 9, 10 are a pair of arms 33, provided with sliding extensions 37, 38, the latter bent into hooks as shown,

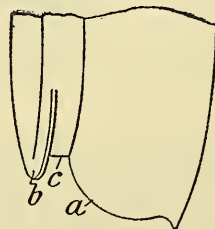


and having attached to them bars 42; extensible yokes 44, 45 are attached to the bars 42. The ends of the bars 42 are provided with lugs on which are pivoted, by the perforations therein, bars 47, 48. To the ends of the bars 47, 48 is attached a third extensible yoke 50. Bars 51, 52 are pivoted on the ends of the bars 47, 48, and are extensible in a similar manner to the bars 33, 34. The bars 51, 52 are again pivoted to levers, and these levers are connected to a rock-shaft operated by a hand-lever 65. An extensible plate 66 is secured to bars 51, 52. In the inoperative position the various yokes 44, 45, 50, 66 are raised by the lever out of the way, and the neck yoke is open. When the animal is driven on to the base, its neck is caught by the neck yokes as soon as its nose touches the frame 26. By the operation of the hand-lever, the other yokes are then brought down, and the plate 66, engaging with its legs, forces them beneath its body, thus holding the animal securely. The extensible yokes are adjusted according to the size of the animal. The whole apparatus can be tilted over to rest on stays provided for convenience of operation.

10,712. Hooper, W. T. May 23.

Collars, neck.—

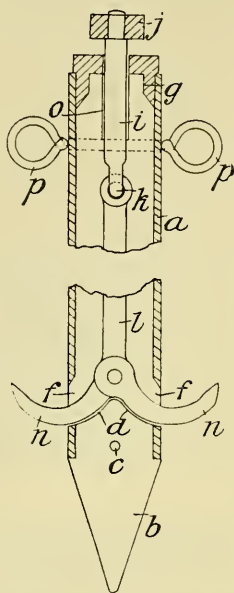
The lower part of the collar *a* is provided with a lip *b* to form a groove *c* in which the chains or straps connecting the hames can rest.



10,730. Coleman, B. L., [Emmis, J. N.].
May 23.

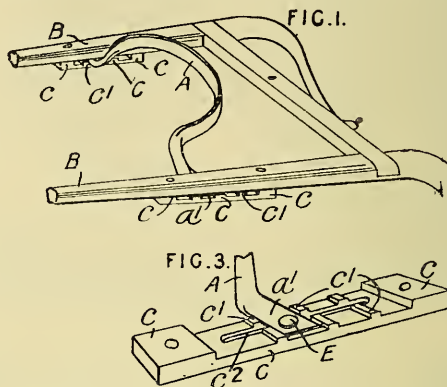
Tethering animals.

—Picketing and like pegs consist of a tube *a*, to one end of which is attached a pointed plug *b* formed with two curved inclines *d*. The top of the tube is closed by forcing over the end, or by a cap *g*, pierced to carry a rod *i* attached at *k* to a second rod *l* pivoted at its lower end to curved spurs *n*, which are forced outwards through openings *f* on the descent of the rod *i*. The cap and tube are slotted at *o* to allow the rod *i* to be moved on one side when the peg is being driven, and a projection may be formed on the head *j* to engage with the slot. Eyes *p*, secured to the tube or formed on a ring, are provided for the attachment of ropes.



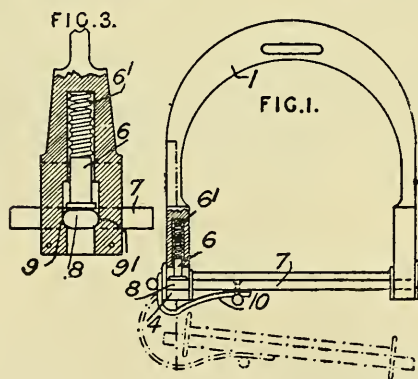
of the rider. The foot-plate is attached to the bow by a leather strap 10.

11,500. Millen, J. T. Oct. 6, 1904, [date applied for under Patents Act, 1901].



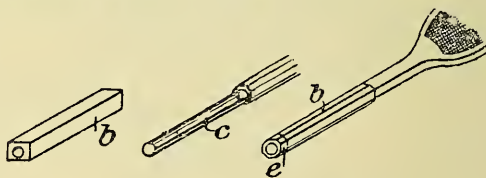
Breeching.—A holdback bar for the shafts of vehicles, by the use of which the ordinary breeching may be dispensed with, consists of a bar *A*, Fig. 1, secured at its ends to the shafts. The ends *a*¹ of the bar are secured in sockets between the ribs *c*¹ formed on a plate *C* and attached at its ends *c* to the shaft *B*, by bolts *E* passing through a slot *c*² in the plate *C*. The position of the bar can be adjusted by detaching the plate *C* from the shaft and moving the ends *a*¹ into the required socket.

10,986. Reisch, J., and Lampert, F.
May 25.



Stirrups.—A safety-stirrup is made with a detachable foot-plate *7*, the elliptical ends of which can rotate in slots *4* in the ends of the bow *1*. The foot-plate is pressed against the curved sides *9, 9*¹ of the slots *4* by a spring *6*¹ acting on a bolt *6*. If the foot-plate is rotated, the ends *8* are pressed out of the slots, thereby releasing the foot

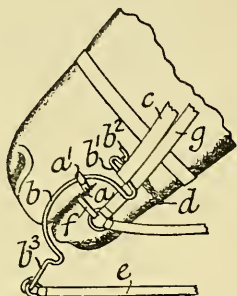
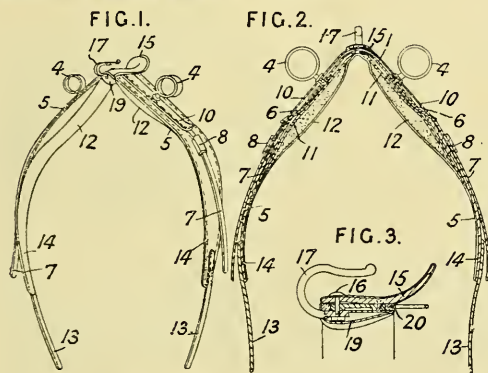
11,576. Fraser, J. G. June 2.



Whips.—Handles for whips &c. are constructed so as to give a firm grip. The invention is shown as applied to a tennis racket. The ordinary handle is covered by a grip formed of a block *b* of cork composition, drilled to receive the prepared end *c* of the handle. The part *c* is grooved or jagged, and is glued or cemented to the part *b*. A protecting-ferrule *e* of vulcanized fibre is fitted to the end of the handle. The block *b* is suitably shaped, and may be roughened to suit the article to which it is applied.

11,699. Ross, E. C. O. June 3.

Bits.—The mouthpiece of a curb bit *a* is formed with loops *a*¹ which can slide on semi-circular cheek-pieces *b*, so that, on the curb rein *e* being pulled, the bit *a* is forced into the angle of the mouth. The cheek-pieces *b* are bent at the upper end to form an attachment *b*¹ for the cheek strap *c* and a hook *b*² for the curb chain *d*, and at the lower end are formed with a loop *b*³. A divided snaffle bit *f* is attached to the curb bit *a* at the middle and is attached to the bridle by side straps *g*.

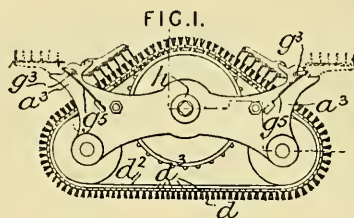
**12,173. Rodgers, J. June 10.**

Saddles; stuffing-materials; fastening.—In a harness saddle, a saddle-tree 1, Figs. 1 and 2, of iron or other metal is covered on the upper side with leather 5 and on the underside with another leather piece 11, as shown. Straps 7 pass through slots 6 made in the piece 5 and through loops 8, and a metal shield 10 is stitched to the piece 5 so as to cover the slots 6 and render the saddle waterproof. The padding consists of buckwheat or other vegetable hulls, and is enclosed between the piece 11 and another piece 12 of soft leather, this latter piece being stitched to the covering 5 so as to form the saddle skirts 14. The skirts are narrowed off to almost the same width as the billets 13 which are stitched thereto. Terret rings 4 are inserted in perforations of the tree 1. A check-rein hook 17, Fig. 3, is connected to the tree and to a saddle 15 by a bolt 16, a covering-piece 19 which is fixed by tacks 20 being provided underneath.

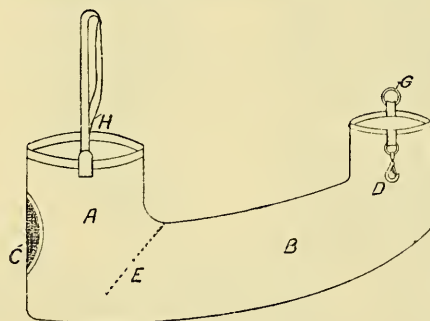
12,314. Scanlan, J. F. June 13.

Brushing-apparatus for grooming.—The bristles

are carried on transverse leather strips *d*³ which may be riveted to a band *d*², which passes round the three cylinders shown, being driven by the middle one, which has teeth engaging with holes in



the edges of the band *d*². Grooves are provided in all three cylinders to allow the passage of the above-mentioned rivets. The brush is held by trunnions *h* on either side as handles, and may be driven after the manner of a horse-clipping machine or by a crank or otherwise, the part *d* being used to brush a horse's coat &c. The brush may be cleaned in any ordinary manner, but, if desired, the frame which carries the cylinders may be extended as at *a*³ to carry curry-combs for the same purpose, pivoted at *g*³ and kept as required, either in the position shown in dotted lines or in that shown in full lines, by springs *g*⁵ and stops.

12,840. Hutchison, W. Nepean-, and Aitkens, A. J. June 21.

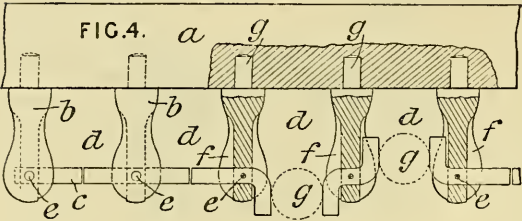
Nosebags.—The food is contained in an extension *B*, separated from the nosebag *A* by a flap *E*, which allows the food to pass into the nosebag as required. The mouth of the feeder is closed by passing a strap *D* through a ring *G*, and is secured to the saddle. The nosebag is provided with a piece of leather *C* perforated for breathing purposes, and is suspended from the horse's head by a strap *H*.

13,498. Harris & Sheldon, and James, R. F. July 1.

Brackets and stands for.—A rack for whips &c. consists of a strip of wood *a* adapted to be secured

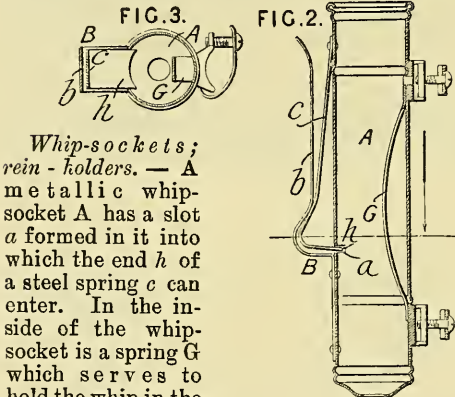
against a wall and provided with a series of projecting brackets or pegs *b*. These pegs are fitted with flexible stop pieces *c* which normally close the

rest by a bolt *m* passing through a slot *l* and has wedge-shaped ends which fit against the levers *e*. Ordinarily the detent is kept in the position shown in Fig. 3 by springs *q* passing round pegs *o*, *p* on



entrances to the spaces *d* between the pegs but allow the insertion or withdrawal of the article *g*. The pegs are grooved at *f* to receive the ends of the stop pieces.

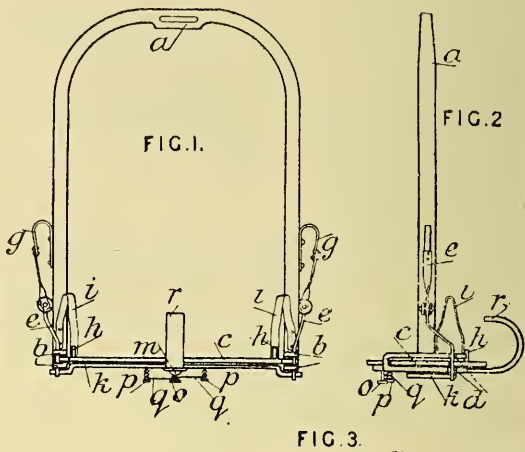
13,559. Jacobs, P. Oct. 19, 1904, [date applied for under Patents Act, 1901].



Whip-sockets; rein-holders. — A metallic whip-socket A has a slot *a* formed in it into which the end *h* of a steel spring *c* can enter. In the inside of the whip-socket is a spring *G* which serves to hold the whip in the socket. The rein-holder B is formed of a steel member *b* riveted to the holder A and so shaped that, when the reins are placed in the rein-holder B, the end *h* of the inner spring *c* is formed into the slot *a* and prevents the whip from being taken out of the socket.

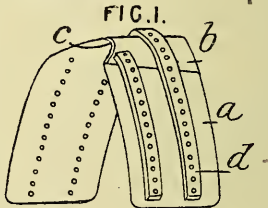
13,566. Brandt, R. July 1.

Stirrups.—The foot-rest of a stirrup is arranged to be shot out by springs when its retaining-catches are released by the foot of a falling rider. The stirrup *a* is provided with loops *b* at the bottom into which slide projecting edges of the foot-rest *c*. Springs *i* attached to the sides of the stirrup bear against pegs *h* on the foot-rest, which is retained in position by levers *e*, the lower ends of which fit into grooves *d* formed in the loops *b* while their upper ends are attached to springs *g* on the stirrup. A detent *k* is fixed under the foot-



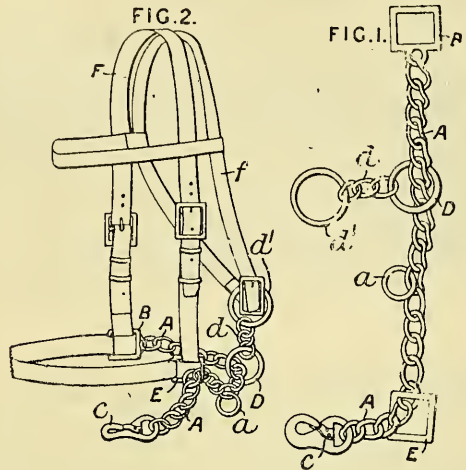
13,672. Guilleaume, R. July 3.

Saddles. — The body-plate *a* of a harness saddle-tree is made from flexible sheet steel and strengthened along the top by a plate *b*, which is hollow at the front and increases in width from the front to the back. The front edge *c* of the body-plate is curved or bent over the front edge of the strengthening-plate *b* to prevent moisture from entering between the plates. Ribs *d* are provided for the backband or chain.



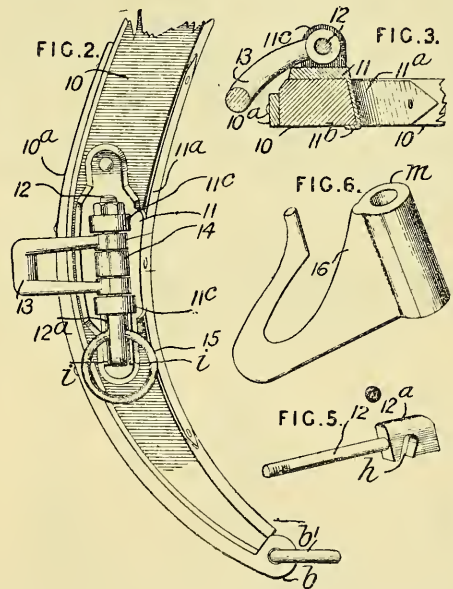
13,879. Tanner, W. E. C. July 5.

Bridles and halters; tethering animals.—A device for fastening horses and other animals together consists of a chain A connected at one end to one of the squares B of the headstall F and having at the other end a spring hook or other fastening c. The chain passes through the other square E of the headstall and also through a ring D, which is connected by a chain d to another ring d' attached to the neck-strap f. To prevent the chain A from being drawn tightly round the animal's mouth, a check-ring a, which is too large to pass through the square E, is provided; a similar ring may be provided at the free end of the chain A, or the fastening c may serve the same purpose. To link the animals together, the fastening c of one headstall is attached to the square B of the next.



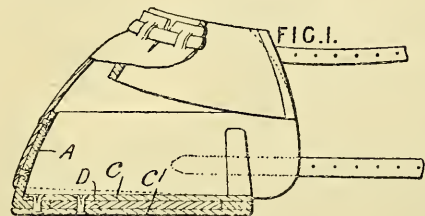
14,313. Hoch, G. B., and Roth, R. C. July 11.

Collars, neck; fastening.—Relates to hames and means for attaching the traces thereto. The hames consist of two wooden parts 10, Figs. 2 and 3, having metal plates 10^a on their outer edges, which are formed into eyes b at the bottom carrying rings b', these two rings being connected across by a looped strap. A bracket 11, having a side flange 11^a and a hooked piece 11^b at its centre, is secured to the hame, and carries ears 11^c adapted to receive a pintle bolt 12 which also passes through a washer 14 and the eyes of a clevis 13. One limb of the clevis 13 is passed through the usual loop at the end of the trace, before being secured by the pintle bolt. The head 12^a of the bolt 12 slides between projections i formed on the bracket 11, and is adapted to carry the breast-ring 15 in an inclined slot h, Fig. 5. An ordinary hook 16, having a lengthened boss m, may be used instead of the clevis.



14,392. Squier, J. W., Jenkinson, W., and Jenkinson, G. E. July 12.

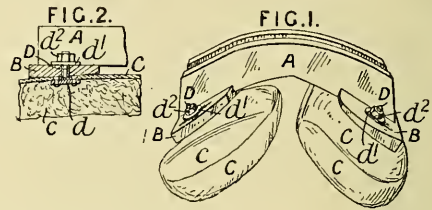
Horse-boots.—The sole of a horse-boot A employed for horses working on lawns &c. is formed of two thicknesses of leather c, c' having a metal plate D between them. The ordinary shoe is thus prevented from working through the leather sole.



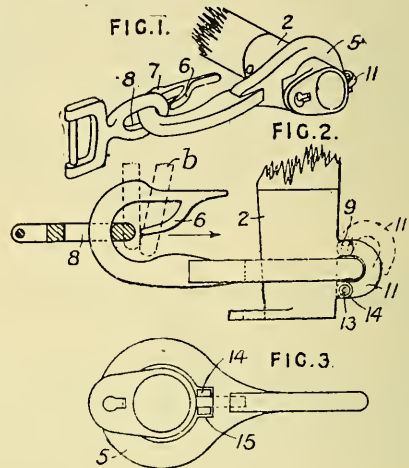
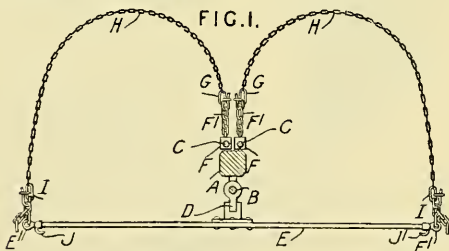
14,931. Chambers, H. C. July 20.

Saddles; pads for.—The pads for the saddles of cart-horses are secured to the saddle-tree by bolts. The wooden tree A is provided with plates B which are adapted to receive bolts D, the flat heads *d* of which are riveted to the leather upper surfaces *c* of the pads C. Nuts *d*² and washers *d*¹ secure the fastening. The pads are stuffed with straw, and the lower surfaces are made of cloth or other material; they may also be ventilated by eyelet holes placed at intervals.

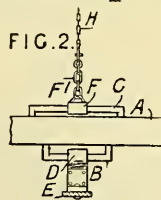
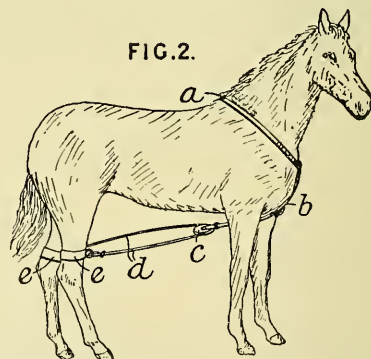
[Reference has been directed under Patents Act, 1902, to Specification No. 15,879, A.D. 1890.]

**15,026. Wendt, L. C.** Jan. 21, [date applied for under Patents Act, 1901].

Fastening traces, hooks and shackles for. In order to prevent the trace tug from becoming detached from the whipple-tree hook while in use, the hook is formed with an inwardly-projecting barb 6 and a hump 7, the opening in the tug eye 8 being of such length that it cannot be passed over the barb unless it is first brought to the position *b*, Fig. 2. The loop 5 of the hook fits between two lugs 9, 14 on the whipple-tree tip 2, and is secured by a pivoted arm 11 fastened by a pin at 13. The loop cannot pass over the lug 14 except when it is turned through two right-angles as shown in Fig. 3, so that a recess 15 in the loop is brought into line with the lug.

**15,153. Giberson, D.** July 24.*Harnessing, systems of.*

—In a system of harnessing for two-horsed vehicles, the pole A is provided with a bar B below and two bars C above, arranged as shown. A link A slides on the bar B and carries a cross-bar E which passes under the two horses, while blocks F slide on the bars C and have short chains F¹ attached to them. Chains H pass over the horses' saddles and are connected by hooks G, I, respectively, to the chains F¹ and to eyes E¹ at the ends of the cross-bar E. Equalizing-straps may be connected to the link D and to hooks J, J¹ secured to the ends of the cross-bar E.

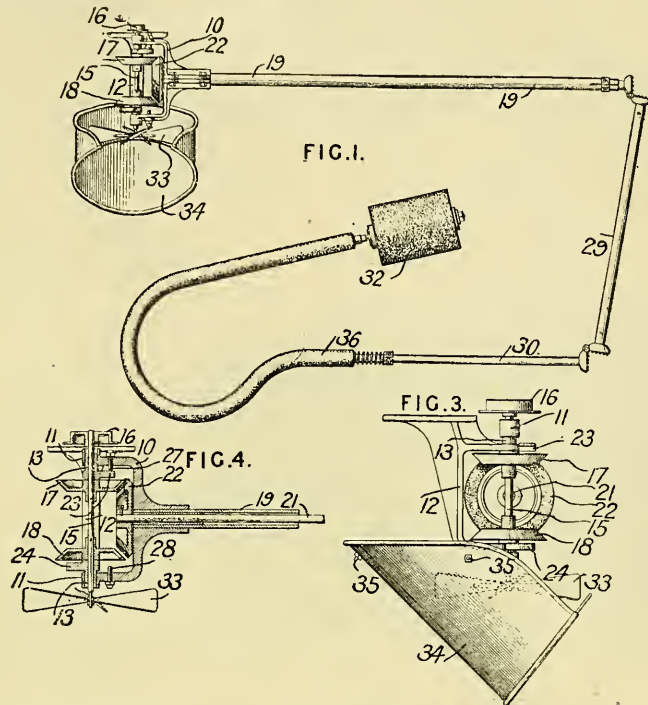
**15,183. Storey, V. J.** July 24. *No Patent granted (Sealing fee not paid).*

Horse breaking and training harness; breeching; hobbles.—A device used in horse breaking and training for preventing horses from kicking or galloping consists of a strap *a* passing round the neck connected by an adjustable strap *b* to a pulley *c* around which passes a flexible rope *d* fastened at each end to a band *e* secured to the horse's leg.

[Reference has been directed under Patents Act, 1902, to Specifications No. 5775, A.D. 1896, and No. 10,234, A.D. 1897.]

15,199. Haddan, R., [*Chicago Flexible Shaft Co.*]. July 24.

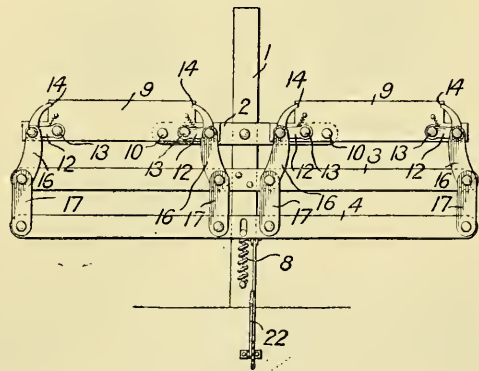
Brushing - apparatus for grooming.—A grooming-machine is arranged so that the direction of rotation of the brush is automatically reversed as the operator passes from one side to the other of the horse, and a current of air is produced to blow the dust away to the rear of the horse. The driving-mechanism consists of a vertical shaft 15 which carries a pulley 16 in connexion with a motor, and two frictional bevel-wheels 17, 18, and is mounted in trunnions 13 formed on a bracket 12 adapted to be secured overhead. A forked crane 10, made in halves bolted together, has its ends 11 mounted over the trunnions 13, and is connected to a sleeve 19 within which rotates a shaft 21 carrying a bevel-wheel 22. The crane 10 carries adjustable projections 27, 28 which come into engagement with cams 23, 24 as the crane 10 is rotated in a horizontal plane about the trunnions 13. When the crane is in the position shown, the cam 23 is depressed so as to bring the bevel-wheels 17, 22 into gear. When the crane is turned through 180 degrees, the cam 24 is raised by the projection 28 so as to bring the wheels 18, 22 into gear, thus reversing the direction of rotation of the shaft 21. Those edges of the cams which first come into engagement with the projections are



bevelled. A fan 33 is secured to the bottom of the shaft 15 so as to produce an air current which is directed by a deflector 34 attached by rods 35 to the bracket 12. The brush 32, Fig. 1, is driven through shafts enclosed in hinged tubes 29, 30, and a flexible shafting 36 in the usual way.

15,639. Bach, G. H. July 31.

Runaway or restive horses, releasing; fastening.—The traces are secured to the whipple-trees of vehicles or farm implements by hook-shaped catches 12 pivoted to the whipple-trees at 13 and engaging in sockets 14. The catch is connected by pivoted links 16, 17 to a controlling-bar 4, which is connected to the pole 1 of the vehicle by a pin-and-slot connexion, the bar being normally pushed forwards by a spring 8. To release the traces, the controlling-bar 4 is moved backwards by an operating-lever 22, which withdraws the hooks 12 from the sockets. The whipple-trees are pivoted at 10 to a bar 2 attached to the pole, and a bar 3 is provided to support the links 16, 17.

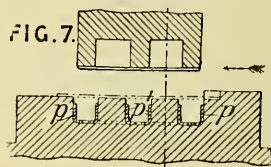
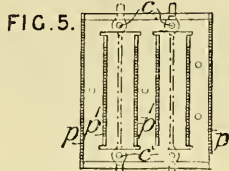
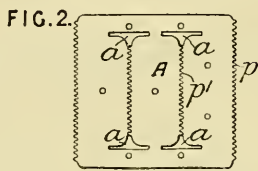
**16,096. Henshaw, A. R., and Henshaw, E.,** [*trading as Atkins & Sons, L.*]. Aug. 8.

Curry-combs.—A curry-comb is formed with the intermediate bars integral with the metal base-plate.

A blank A of sheet metal is stamped to form slots *a*, Fig. 2, and the edges and intermediate portions of the blank are cut to form serrated edges. The metal blank thus divided is shaped between dies, Fig. 7, the serrated portions *p*, *p*¹ being bent at

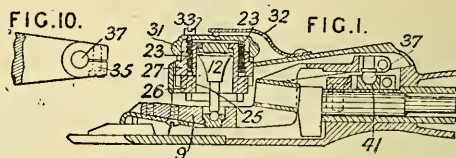
right-angles to the plane of the metal plate to form the bars of the curry-comb. Forged bars,

shown in broken lines in Fig. 5, may be introduced and riveted at *c* to the back.



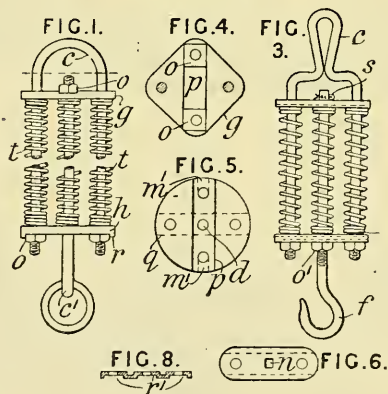
16,156. Virtue, W. W. Aug. 8.

Horse clippers and the like.—Relates to clippers in which pressure is applied to a vibrating lever 9 by a segmental spherical rocker 12, and consists in mounting the rocker in a cylindrical thimble 25, Fig. 1, slidable in a fixed vertical tube 23, and in providing removable bearings for the fulcrum of the lever. The thimble is formed with lugs 26, Fig. 1, which project through slots formed in the carrying-tube 23 and take the pressure of the tension nut 27. The tension nut is rotated by lugs which engage slots in a cap 31 pressed down by a spring 32. A screw 33, engaging notches in the top of the carrying-tube 23, prevents accidental unscrewing. The fulcrum pin 37 is detachably



mounted at the end of the vibrating lever 9, which is slotted through to allow a screw 35, Fig. 10, to bite it upon the pin. A fulcrum cup 41 is mounted, in a similar manner, in a clamp plate attached to the machine case.

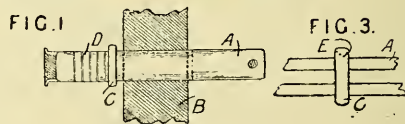
16,165. Capner, P. J. Aug. 8.



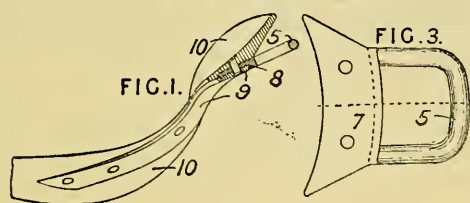
Fastening; traces.—Relates to a spring device which may be used in connexion with traces &c., and which may be adjusted in strength by varying the number of springs and by use of adjustment plates whereby the initial compression of the springs may be altered. A four-spring arrangement is shown in Figs. 1 and 4, and comprises two U-shaped bars *c*, *c'* surrounded by springs *t* and attached by means of screwed ends and nuts *o* to adjustment plates *g*, *h*. A five-spring device may be obtained by providing a central bolt *d* as in Fig. 5. These adjustment plates may be used for

devices having less than four springs, or the arrangement shown in Figs. 3 and 6 may be used, where the central bolt is provided with a hook *f*, nut *o'*, and split-pin *s*. The apertures in the adjustment plates, instead of being circular, may be angular as at *n*, or may consist of slots *m'*, Fig. 5. Grooves *p*, *q* may be formed in the adjustment plates to receive the ends of the springs and to prevent the nuts from turning when in position; or the plates may have flanges *r*, Fig. 1, or stamped recesses *r'*, Fig. 8. In modifications, the adjustment plates may be triangular, and the U-shaped bars replaced by three-legged devices.

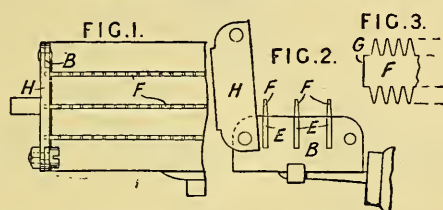
16,203. Dodds, J. G. Aug. 19.



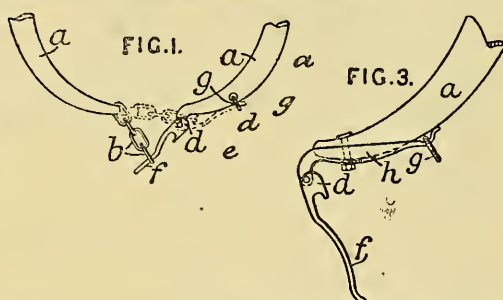
Bridles; rein-holders.—A clip *A* is secured to each rein *B* at the rear of the terret ring, so that the horse is prevented from falling and is kept under control when the reins are released, the clip is secured by a metal ring *C* having a bevelled part *E*, Fig. 3, to engage in grooves *D* on the clip.

16,865. **Butler, E. R.** Aug. 21.

Saddles.—The loop 5 at the rear of the saddle-tree for attaching the crupper straps is formed separately from the strengthening-bar 9 of the saddle-tree. An extension 7 of the loop, recessed at 8, is riveted between the bar 9 and the saddle-tree 10.

16,953. **Bramall, G. M.** Aug. 22.

Curry-combs.—The blades F of a curry-comb, made with teeth at both edges so as to be reversible, are secured in slots E in the ends B of the holder by a catch plate H pivoted to the end B and provided with a turned-over top edge which secures the ends G of the blades.

17,393. **Carter, R. H.** Aug. 28.

Fastening.—A hook fastening for traces, backbands, and other parts of harness, and shown applied to harness, consists of a lever hook d pivoted to the hame a or to a plate h, Fig. 3, attached thereto, and a link g secured to the hame. Links b, Fig. 1, attached to one hame are passed over the end f of the hook, and the hames are drawn together by closing the hook. The end of the hook is secured by passing it through the link g.

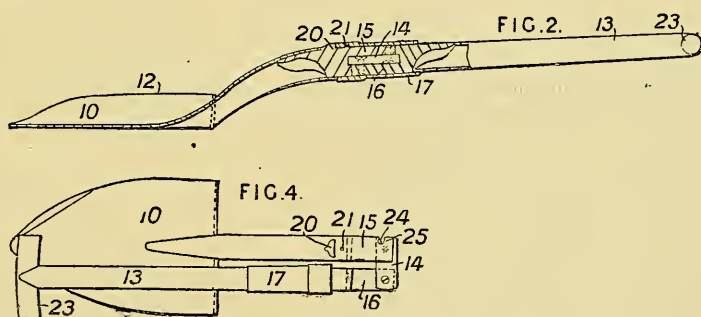
[Reference has been directed under Patents Act, 1902, to Specifications No. 3471, A.D. 1883, and No. 3948, A.D. 1901.]

17,503. **Simpson, R.** Aug. 30.

Grooming-pads.—A sheet of coarse fabric, such as canvas or sacking, is impregnated with common salt, and used as a rubber for animals' coats.

17,582. **Beatts, C.** Aug. 31.

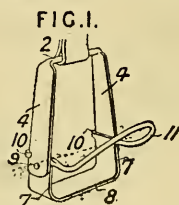
Tethering animals.—An entrenching and pioneering tool has a spade, shaped to act as a pick or axe, with a hinged hollow shaft containing a picketing-peg or other article and adapted to act as a wire cutter. A detachable cross-handle 23 may have fixed to it a picketing-peg which can be inserted into the hollow shaft and held by a spring catch. Specifications No. 223, A.D. 1880, No. 1913, A.D. 1887, No. 7961, A.D. 1895, No. 18,188, A.D. 1897, and No. 3461, A.D. 1903, [Abridgment Class Hand tools &c.], are referred to.

17,690. **Eldenburger, C. F., and Rensch, A.** Sept. 1.

Stirrups.—A safety stirrup is formed with a bow-shaped upper member 2 having spring arms 4 which normally press against and are pivotally

connected to the sides 7 of a lower member 8. A bail 11 extends outwardly and diverges from the lower member and rests above the rider's

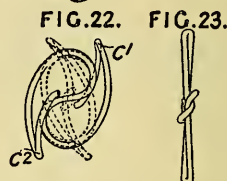
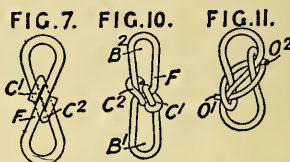
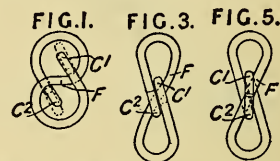
foot. If the bail is turned on its pivots 9, the diverging arms of the bail force the spring arms 4 apart and separate the two members. Lugs 10 are provided on the lower member to engage with the spring arms 4 and prevent lateral movement until the lower member is rotated.



17,852. Bryant, C. Sept. 4.

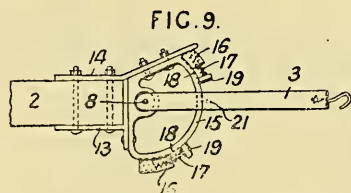
Bits; traces.—Curb, trace, and other chains and hooks for harness are formed of links constructed in accordance with the invention, which relates to improvements in chain links of the kind described in Specifications No. 2591, A.D. 1902, [*Abridgment Class Chains &c.*], and No. 3811, A.D. 1905, and particularly to the manner of securing the lock ends. The wire being formed into an S, the ends C^1 , C^2 , Fig. 1, may be led over the central portion F and the link drawn out to secure them parallel as in Fig. 3, butting as in Fig. 5, or parallel to the central portion as in Fig. 7; or the ends being made longer may be drawn through the bights B^1 , B^2 , as shown in Fig. 10; or each end may be drawn through the end loop of the other, as

shown at O^1 , O^2 , Fig. 11, and the link drawn up, thus securing the wire knots. Or other similar knots may be formed, or the ends may be formed with



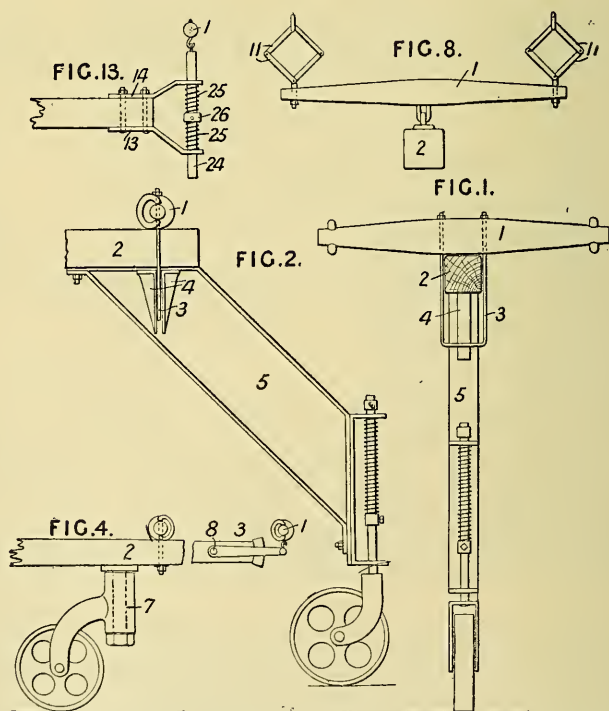
large loops C^1 , C^2 , Fig. 22, and drawn over the ends of the link to form the link shown in Fig. 23.

19,560. Stoll, W. Sept. 27.



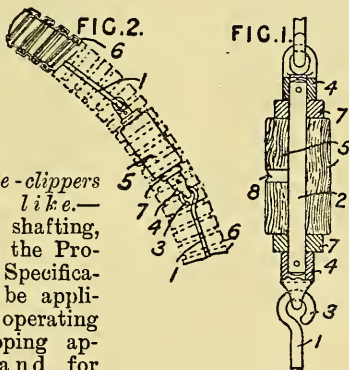
Yokes, neck; fastening.—In order to prevent the weight of the pole of mowing and other similar agricultural implements from coming upon the neck of the draught animals when depressions in the ground are encountered, the guide-bar is arranged so as to be independent of the vertical movements of the pole; and, further, springs are provided to deaden the shocks caused by the pole coming against the stops which limit its vertical motion. The guide-bar 1, Figs. 1 and 2, is fitted with a strap 3 which can slide over the pole 2 and between brackets 4 fixed under the pole. This arrangement may be used whether the support 5 is at the front or rear end of the pole. In cases where a rigid back support 7, Fig. 4, is used, the guide-bar 1 is fitted with a horizontal fork 3 which embraces the pole 2 and is pivoted thereto at 8.

In a modification, the pole 2 is in two pieces connected by a horizontal pivot at some point between



the guide-bar 1 and the support 7. In another modification, Fig. 8, the guide-bar is secured to the pole, and links 11 are arranged between it and the collar chain. One form of the spring devices as applied to the arrangement of Fig. 4 is shown in Fig. 9, where the fork 3 is pivoted to a bracket 15 fixed to plates 13, 14, bolted to the end of the pole 2, and is limited in its motion by the engagement of a pin 21 with stops 19 working in guides 18 and fitted with spiral springs 17 mounted in sockets 16. In modifications, the spiral springs may be replaced by blade springs; or, instead of stops, spiral springs may be arranged between the bracket 15 and the ends of the fork 3, encircling the pivot 8 so as to offer a torsional resistance. In a further modification, Fig. 13, the guide-bar 1 is connected to a rod 24 which slides in plates 13, 14 at the end of the pole, and is fitted with a collar 26 and springs 25.

19,807. Soar, H. Sept. 30.



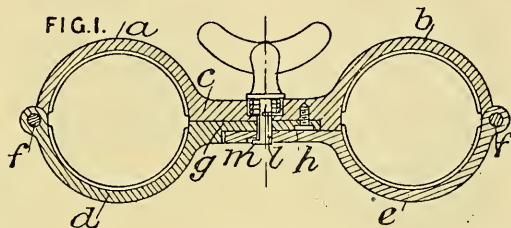
Horse-clippers

and the like.—Flexible shafting, stated in the Provisional Specification to be applicable for operating horse-clipping apparatus and for other purposes,

consists of short lengths of rods 1, 2 connected by universal or like joints such as hooks and eyes 3, 4. On to each or each alternate rod 2 is threaded a bushing 5, preferably of *lignum vitæ*, which is kept in place between washers 7 by means of eyes 4 riveted to the ends of the rods 2. The bushes 5 support the rods in a guide-tube 6 formed of

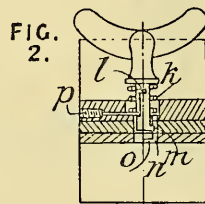
flexible material, such as stiffened canvas, rubber, leather, or metallic flexible tubing, or of rigid tubing forced into fixed curves, or the tubing may be partly rigid and partly flexible. The interior of the guide-tube 6 may be lubricated by plumbago, vaseline, &c. This also lubricates the rods 2 through the holes 8.

20,549. Bogner, S., and Toth, L. Oct. 11.



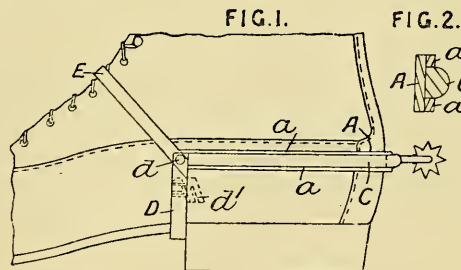
Fastening.—To facilitate the release of a fallen horse harnessed to a vehicle, the whipple-tree is detachably connected to the whipple-tree bar by two collars

the upper parts *a, b* of which are rigidly connected, while the lower parts *d, e* are hinged at *f* to the upper parts. The lower part *d* of the ring enclosing the whipple-tree bar is provided with an arm *g*, which is screwed to the bridge-piece *c*. The lower part *e* of the ring *b, e* is secured to the bridge-piece *c* by a spring locking-bolt *l*, which is provided with a projection *m* entering a recess *o*. When the bolt *l* is turned through an angle limited by a fixed pin *p*, Fig. 2, the projection *m* enters a vertical groove *n* and is forced out of engagement with the hinged part *e* of the ring by the spring *k*. The ring *b, e* can then be opened and the whipple-tree removed.



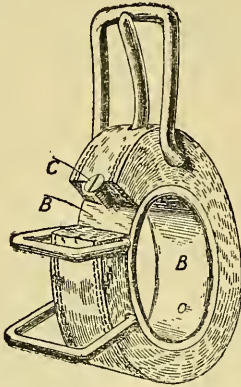
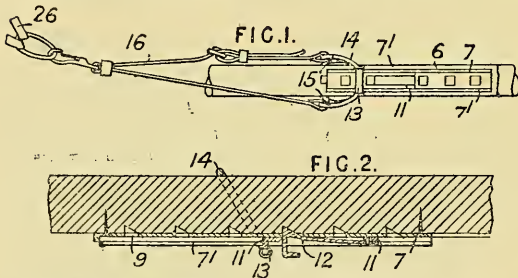
20,829. Robinson, W. H. Oct. 14.

Spur-carriers.—A recessed leather or other strap is attached so as to embrace the back of the boot by means of cross-straps, and serves to receive the fork of the spur, thus preventing injury to the boot. The recess of the protecting-strap *A* which receives the spur is formed by attaching side ribs *a* thereto. The cross-strap *D* may be stitched to the strap *A*, while the strap *E* is loose and is attached by a button *d* or otherwise, a tab *d'* being provided on the strap *D* for this purpose.

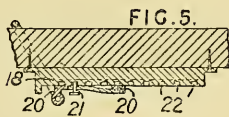


20,863. Salter, H., and Cowles, F.
Oct. 14.*Tugs, shaft.—*

Leather shaft tugs are provided with a thick inner lining of metal B secured thereto by means of screws C. The lining is formed without side flanges, and may be forced into the interior of the tug. It may be made in two or more parts which may interlock, being secured by screws or rivets. In applying the invention to existing tugs, a portion of the leather is removed to admit the metal sleeve.

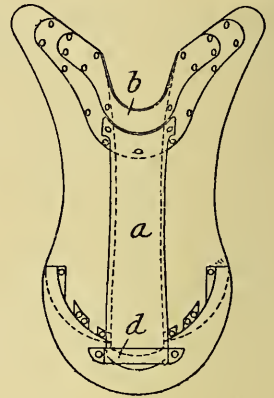
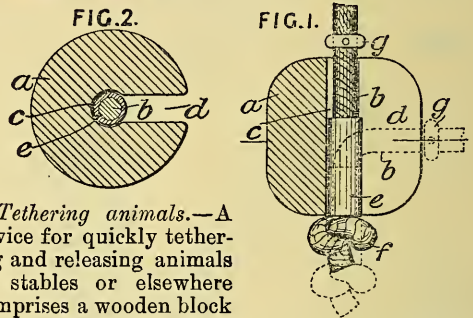
**21,251. Thomas, W. J.** Oct. 19, 1904,
[date applied for under Patents Act, 1901].

Fastening breeching. To each shaft of a vehicle is secured a plate 7 having upturned edges 7¹ to form a slide for a slotted adjustable plate 11, to which are connected the breeching-straps 26. A ring 14, having lugs 15 for attachment of straps 16, is pivoted at 13 to the plate 11 and surrounds the shaft 6. The plate 7 is slotted at 9 to receive a spring tooth 12 secured to the plate 11, which can slide in a forward direction but is prevented by the spring tooth from moving towards the vehicle. In a modification, a double channelled plate 18, Fig. 5, forms the slide for the plate 20, and slots 22 are provided in the plate 18 in which a pin 21 engages.

**21,546. Guilleaume, R.** Oct. 23.

Saddles.—The seat plate *a* of a saddle-tree is made

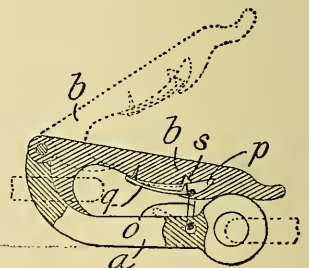
of elastic sheet steel secured only at one end *b* and supported and guided freely in a loop *d* at the other end.

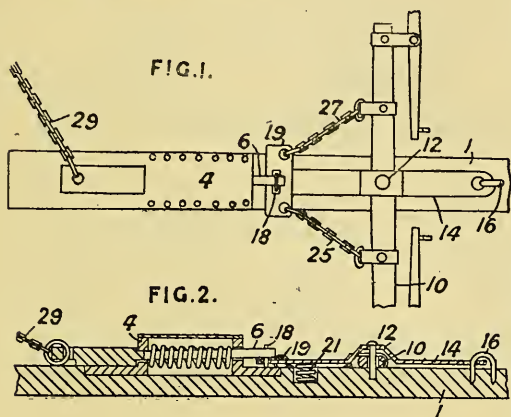
**21,593. Berkley, J.** Oct. 24.

Tethering animals.—A device for quickly tethering and releasing animals in stables or elsewhere comprises a wooden block *a* provided with an axial hole *c* and a slot *d*. Through the hole *c* passes the head-rope *b*, which is knotted at *f* and fitted with a stop-ring *g* and tube *e*, this tube being of sufficient diameter to prevent that part of the rope which it encloses from passing laterally through the slot *d*. To release the head-rope *b*, it is bent through the slot as shown in dotted lines, when the tube *e* and rope *b* can be made to slide out of the hole and slot. The hole *c* and tube *e* may be tapered, the rope being secured within the tube, which is provided at the end with a flange to take the place of the knot *f*. Instead of the tube *e*, a ring, fixed on the rope at a point corresponding to the top of the tube, may be employed.

22,128. Griesing, W., Mädler, A. B., and Hartung, V. Oct. 30.

Fastening.—A draw-hook or tug-hook, which can be easily opened to release a fallen horse, has a hinged member *b* secured by the ring *o*, engaging over the tongue *p* and retained by the spring *q*, which is pressed into the recess *s* when the hook is to be opened.



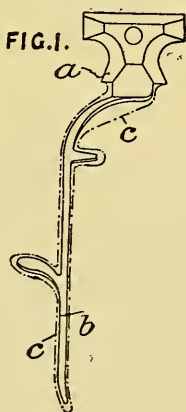
22,502. Faison, L. P. Nov. 3.

Runaway horses, releasing.—The double-tree 10 is secured to the pole 1 by a link 14 secured at its forward end to a staple 16 and slotted at its rear end to pass over a U-shaped guide 18. The link 14 carries a pin 12 which passes through the double-tree 10 and engages with a recess in the pole. The double-tree is also connected by chains 25, 27 to a slotted plate 19 which passes over the guide 18. On the pole 1 is secured a casing 4, forming a guide for a spring bolt 6 which normally passes through the U-shaped guide 18, securing the plate 19 and link 14 in position. In order to release the double-tree from the vehicle, the bolt 6 is withdrawn by the driver by means of a chain 29, and the link 14 is then disengaged from the guide 18 by a spring 21.

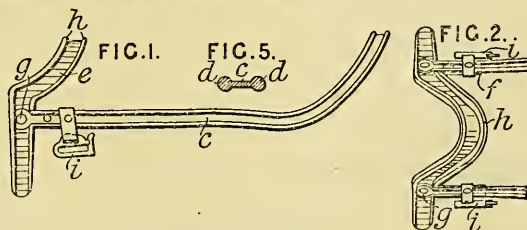
22,960. Engels, G. Nov. 9.

Horse-clippers and the like.—

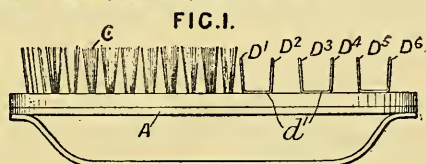
The members are stamped from sheet steel in such a manner that the acting portions *a* of the clipper are stoutly made of steel while the handle portions *b* are made much thinner to form a core round which is cast a metal *c*, such as tin, zinc, antimony, or the like, or an alloy of these metals. A regulating-comb is similarly stamped from thin sheet steel and coated with metal or alloy.

**23,089. Chesterman, A. W., and Ketley, C. B.** Nov. 10.

Stirrups.—The tread is roughed by conical steel pins 2 driven into tapered holes.

23,134. Bergdolt, L. F. Nov. 10.

Saddles.—The side bars and cantle of a saddle-tree are formed of a steel bar which comprises a flat web *c* with enlargements *d*, Fig. 5, at the side. The pommel *e*, Fig. 1, consists of a channel bar of steel, the flanges *h* projecting upwards to strengthen the curved portion of the pommel. The pommel and side bars are connected by lugs *f, g* which are formed integral with the parts. The supports *i* for the stirrup leathers are riveted to the side bars and through the lug *f*.

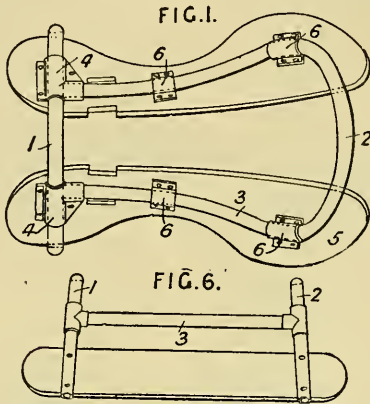
23,199. Hayward, D. Nov. 11.

Curry-combs.—A combined curry-comb and brush comprises serrated bars $D^1 \dots D^6$, forming the comb, and rows of bristles *C* fixed to a suitable back *A*. The bars of the comb may be made in pairs by bending plates to the trough shape shown. The bars may be secured to the base by means of prongs pierced and bent out from the base *d'*.

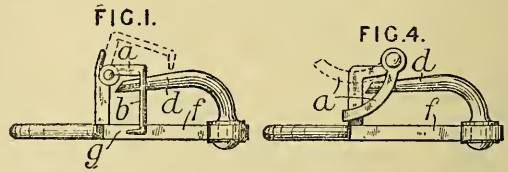
23,622. Sunderland, J. B., Fox, E., and Darby, D. Nov. 16.

Saddles.—The pommel 1 and cantle 2 of a saddle-tree for a riding or pack saddle are made of metal tubing of any section connected together by metal tubes or by grooved or plain metal bars 3. The side plates 5 are connected to the metal frame

by clips 4, 6. The side members 3 and the cantle 2 may be made in one piece of tubing.

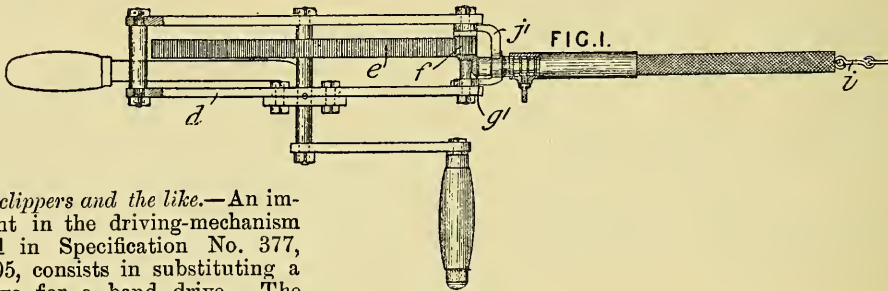


24,142. Wendler, F. Nov. 22.



Fastening.—The trace hook described in Specification No. 13,988, A.D. 1900, is improved by supporting the locking-part *a*, Fig. 1, above the end of the hook *d*, so that it is retained in position by gravity. The locking-part consists of arms *b*, which preferably bind against the tapered part *g* of the bar *f*. Fig. 4 shows a modification in which the part *a* consists of a loop which is raised backwards to release the hook.

24,496. Warren, H. C., Brown, L. C., and Brown, C. R. Nov. 27.

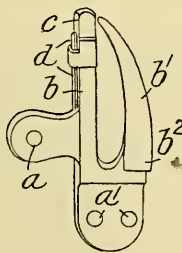


Horse-clippers and the like.—An improvement in the driving-mechanism described in Specification No. 377, A.D. 1905, consists in substituting a spur drive for a band drive. The hand-driven spur-wheel *e*, arranged within a housing *d* pivotally mounted on the top of a standard, engages a spur spindle *f* connected by bevel gearing to a spindle *g*, which has its bearing

in a swinging yoke *j* and is connected to the end section of the flexible shaft *i*. Balls may be inserted in the bearings to reduce friction.

24,668. Lancashire, H. Withers-. Nov. 29.

Stirrup straps, suspending, safety saddle-bars for. The saddle-bar secured to the saddle-tree at the points *a, a'* is formed with upper and lower projecting bars *b, b'*. The lower bar is curved outwardly at *b²*, to allow free play of the stirrup leather between the bar and the saddle, and upwardly at the free end. On the end of the upper bar *b* is pivoted a piece *c* which is pressed by a spring *d* against the end of the lower bar, and retains the stirrup strap in place under normal conditions, but yields and allows the strap to escape if the rider is thrown.

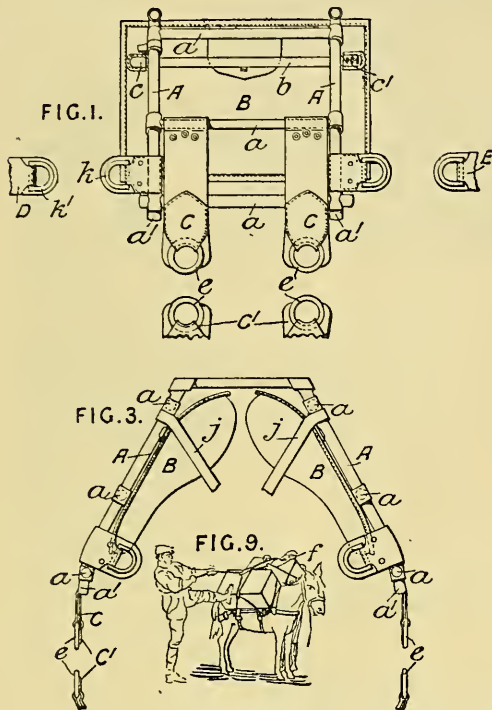


25,001. Morgan, C. E. Dec. 2.

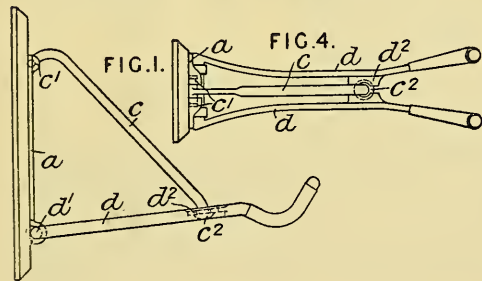
Saddles.—The frame of a pack-saddle is formed of tubular ribs *A* having a flat part at the top so that the load may be placed on the top as well as at the sides of the saddle. The ribs *A* are connected by cross-bars *a, b*, and the pads *B* are secured to the frame by pockets *c, c'*. The saddle is secured in position on the animal by girths *C*, fastened to the middle bar *a* and adjusted by a strap connecting rings *e* on the parts *C, C'* of the girth. Breast and breeching straps *E, D* and crupper straps *j*, Fig. 3, are provided, and the straps *D, E* are adjusted by a strap connecting the *D*-links *k, k'* or by any other means. The ribs *A* have projecting ends *a'* behind which is passed the cord *f* for securing the packages in position as shown in Fig. 9.

(For Figures see next page.)

25,001.

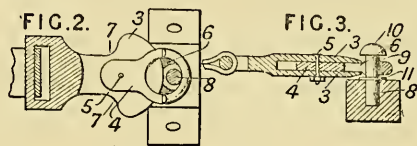


25,076. **Bullows, W. L., and Stanley, I.,**
[trading as Bullows & Sons, A.]. Dec. 16.



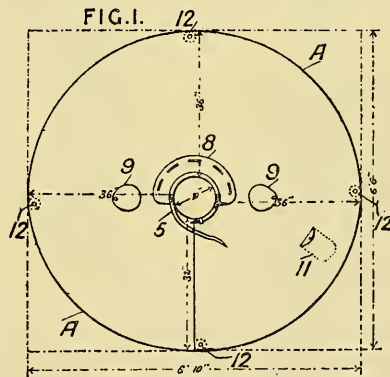
Brackets for harness &c. In a folding or collapsible bracket or support for buckets, harness, and like articles, an arm *d* hinged at *d*¹ to a back-plate *a* is sustained in its extended position by the enlarged end *c*² of a rod *c*, which is similarly hinged at *c*¹ to the back-plate. As shown, the arm consists of two members connected by a bridge-piece *d*², which is slotted to receive the supporting-rod. When the bracket is not required, the arm is turned upwards so that the arm and the rod assume positions in close proximity to the wall. As mentioned in the Provisional Specification, in lieu of using a rod, a chain attached to the back-plate may be provided with a hook to engage the arm.

26,361. **Widdop, T., and Perry, J.**
Dec. 18.



Fastening.—A form of stud-and-eye fastening intended for use in connexion with the check rein and traces, or with the neck-yoke &c. of harness, is shown in Figs. 2 and 3. An eye 6, forming part of a member 4 pivoted between the arms 3 by means of a pin 5, engages with a stud 8 having a shank 9 and an enlarged head 10, Fig. 3. The metal of the ring is thickened on the side away from the pivot. Notches 7 are provided in the arms 3, so that, when the part 4 is turned over towards the notches, the eye 6 is left open and can be slipped over the head 10 of the stud 8. When the arm is pulled into the normal position, the detachment of the parts is prevented by the circular ends of the arms 3 engaging under the head of the stud. The stud 8 may be furnished with a washer 11.

26,696. **Crofton, H. C. S.** Dec. 21.

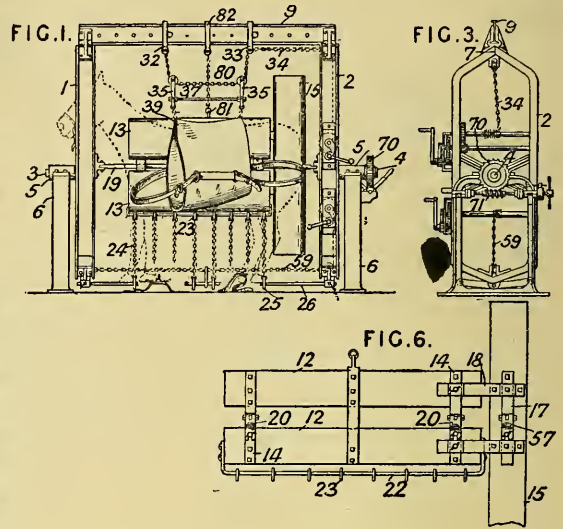


Clothing for animals.—A circular cape *A* for mounted infantrymen, which can be worn round the waist like a kilt, can also be employed as a horse cover.

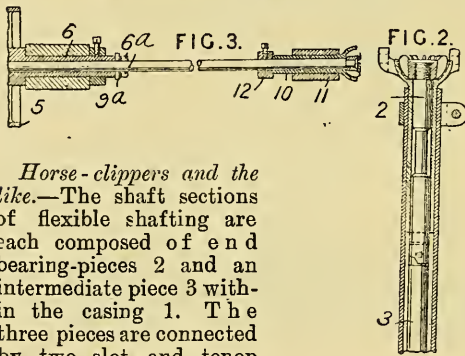
26,706. **Atwood, F. G.** Dec. 21.

Animals, stocks and like appliances for holding.—A veterinary operating-table, with adjustable supporting-cushions, means for securing the animal, and means for turning the animal on its side, consists of end frames 1, 2, Figs. 1 and 3, connected together by an I-beam 9 and supported by pintles 3, 4 journaled in boxes 5 carried by standards 6. The animal is supported by a sling 39 attached to hooks 35, connected together by a rod 37 and

supported by means of the chain 34 from straps 32, 33 adjustable along the beam 9. Each side of the framework is provided with a detachable bar 19 on which are adjustably secured the supporting-cushions 13, Figs. 1 and 6. The back-plates 12 of the cushions are connected together by end straps 14, which are provided with clamps 20 whereby the cushion is attached to the bar 19. An auxiliary cushion 15 is provided with straps 18 whereby it may be attached to the cushion 12, and with a strap 17 and clamp 57 similar to those on the main cushions. The auxiliary cushion serves to support a limb of the animal or as a head support for anæsthetizing or dental purposes. The animal's legs may be secured by straps, either to the chain 59 or to chains 24 attached by clamp rings 23, 25 to the bars 22, 26, which are attached to the cushions 13 and the end frames 1, 2 respectively. The cushions 13 are further supported by means of the chain 80, which connects the ring 81 to a strap 82 on the beam 9. Toothed gearing is provided to tighten the chain 59 and to raise the sling 39, and a worm 71 and worm-wheel 70 serve to rotate the table.



27,099. Stewart, J. K. Dec. 28.

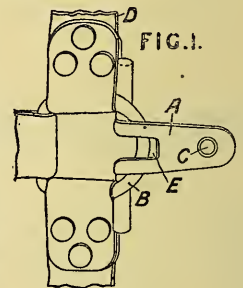


Horse-clippers and the like.—The shaft sections of flexible shafting are each composed of end bearing-pieces 2 and an intermediate piece 3 with-in the casing 1. The three pieces are connected by two slot-and-tenon joints, as shown in Fig. 2, placed at right-angles to each other to allow a universal-joint movement. Where a jointed shaft is driven by a shaft journaled in fixed bearings, the arrangement shown in Fig. 3 is employed. The driving-wheel 5 has a hollow extension 6 into which extends the initial element 9 of the flexible shaft. The two parts are engaged by sliding them together until a pin 9^a of the shaft 9 engages a notch 6^a in the end of the hub 6. The movement of parts is

limited by a stop collar 12 at the end of the casing 10 passing through the fixed bearing 11.

27,211. Lovie, C. Dec. 30.

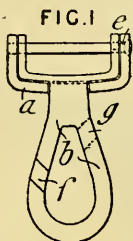
Fastening halters and the like to stalls &c. A metal fitting A having projecting arms as shown and slotted at E is fixed at C to the end of the chain to which the horse's head collar D is to be attached. The arms of the fitting A are inserted in the ring B of the head collar as follows:—The slot E is first fitted on to the ring, and the fitting A is then turned sideways completely through the ring. The body of the fitting is then pulled back through the ring, leaving the arms engaging the ring as shown. The appliance, instead of being attached to the head collar, may be employed to form a neck loop in the tethering-chain. For this purpose, the fitting A engages with a ring at about the centre of the chain.



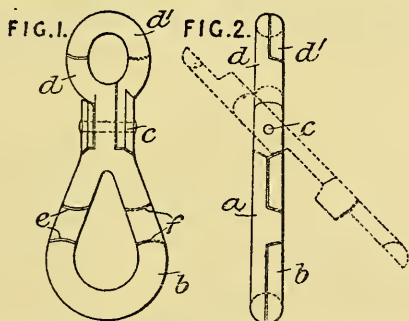
A.D. 1906.

272. Tibbitts, J., Hillback, E., and Bayley, W. Jan. 4.

Fastening.—A safety hook consists of two similar parts *a*, *b* pivoted on a pin *e*, each part having a gap *f*, *g* which is covered when the parts are together. When fully opened, the device forms a double-ended hook.



272A. Tibbitts, J. May 5.

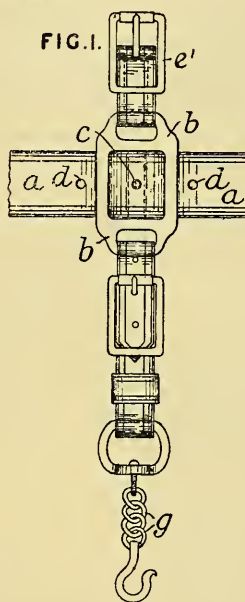


Fastening.—A shackle or hook for harness consists of two parts *a*, *b* pivoted on a pin *c*, and having

half-crews *d*, *d'*. Each part of the hook has an opening *e*, *f*, which is closed by the other part, as shown. The upper crew may be of oblong shape to receive a strap &c. Either the upper or the lower part of the hook may be solid and undivided.

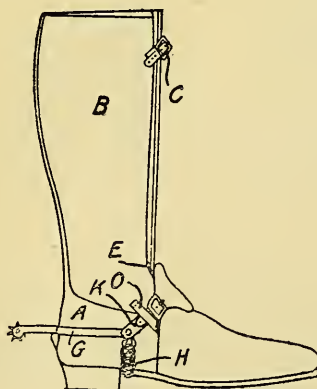
1149. Owen, W. Jan. 16.

Breeching; traces; fastening.—The breeching *a* for harness used with mowers, binders, manure spreaders, potato diggers, &c. is passed through loops in a carrier *b* and is secured by a pin *c* entering one of the holes *d* in the breeching. The carrier *b* is connected by a buckle *e'* to the hip straps of the crupper, and is provided at its lower end with a hook *g* for supporting the chain traces.



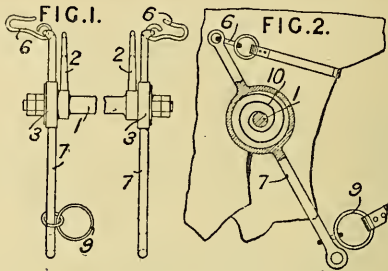
1266. Henderson, D. E. Jan. 17.

Spurs and spur-carriers.—In a combined boot, legging, and spur, which can be readily put on or off, the spur strap K passes under leather loops O secured to the boot. The spur may be made in two parts hinged together.



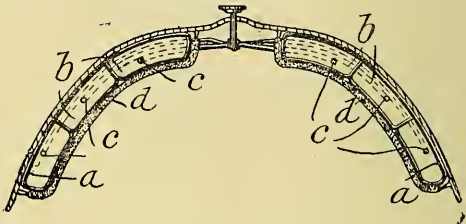
1414. Kronheim, W. Dec. 27, 1905, [date applied for under Patents Act, 1901].

Bits.—The mouth-bar 1 is suspended from the cheek straps by bars 2, which prevent the bit from moving laterally in the mouth. The reins are attached by rings 9 to side bars 7 which are rotatable on the mouth bar 1 under the action of spiral springs 10 enclosed in the casing 3. The curb chain is attached by hooks 6 to the side bars, so that, when the latter are rotated by a pull on the reins, the curb chain is gradually pressed against the animal's chin.



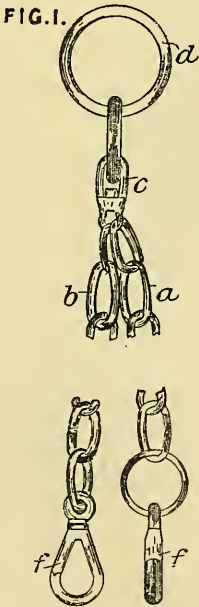
1514. Deditius, W. Jan. 19.

Saddles; pads for.—The air pads *a*, which completely cover the underside of the saddle, are divided into separate compartments *b*, each of which is provided with a separate air-pipe *c* and inflating-valve. By this means, the inner surface of the pads, which may be covered with a layer *d* of felt, can be made to take any desired form.

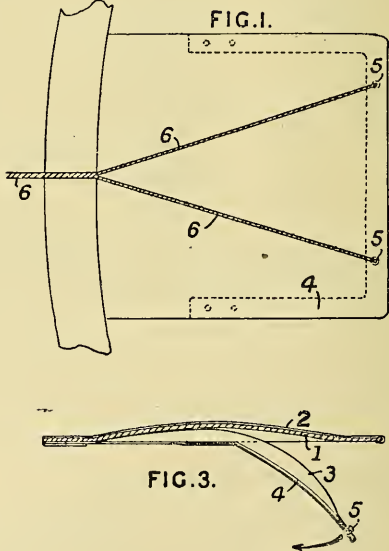


2044. Abraham, J. Jan. 26.

Tethering animals.—A bullock chain comprises two component chains *a*, *b* attached by a swivel *c* to a ring *d*, the free ends having connected to them spring catches *f*. Both chains are passed round the animal's neck, one above and the other below the neck, the spring catches being secured together or to links in the chains. The arrangement allows the animal to move its head freely.



inner lining 3 secured to a support 4 normally held by spring buttons 5 to the metal plate 1. When



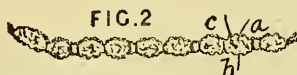
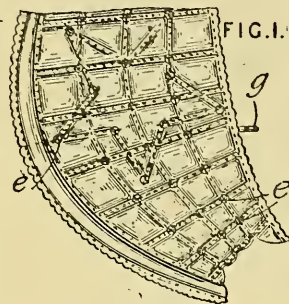
the buttons are released by a pull on a cord 6, the inner lining 3 moves inwards to obstruct the sight under the influence of its spring support 4.

2124. Dolne, H. Jan. 27.

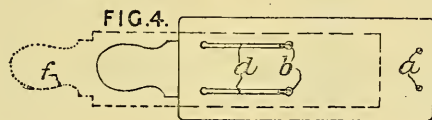
Bridles; stopping and controlling runaway and restive animals.—A blinker is formed with the

2215. Ladd, S. A. Jan. 29.

Pads for; ventilation.—The pad is formed of two layers of cloth with a composite stuffing *c*. Perforations *e* are cut through the pad, and the quilting-stitches are made to cross at the perforations. This makes humps with-in the quilting lines and ensures the perforations being kept open. Hooks *g* may be provided at the edge of the pad for connecting it to the harness. In a collar pad, additional perforations and quilting may be made at the point where the shoulder joint comes.



2522. Mann, T. G. Feb. 1.



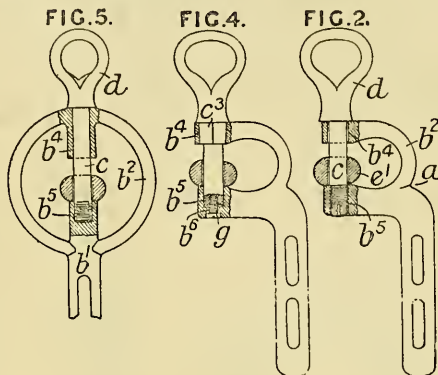
Cleaning-apparatus for.—An appliance for cleaning spur straps consists of a wooden or metal frame fitted with a telescopic slide *f*. One end of each spur strap is fixed to a pin *a* at the end of the frame, and the other end is attached to a hook *b*, which is fixed to the slide *f* and projects through a slot *d* in the frame. By pulling out the slide, the hooks *f* travel along the slots *d* and draw the straps taut, so that they can be readily cleaned.

3338. Anderlik, F. Feb. 10.



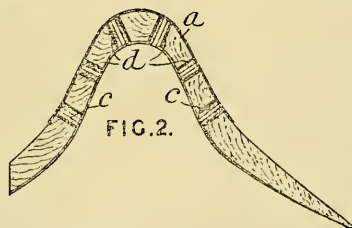
Collars for dogs.—An address receptacle for attachment to a dog collar consists of two parts *a*, *b* adapted to be screwed together and to contain a card bearing an inscription. Each of the parts is provided with a ring *d* engaging with a bail on a link *e*. The links *e* are further provided with bails *f* adapted to engage a split ring *g*, which may then be screwed to a ring on the dog collar.

3393. Dolman, F. H. Feb. 12.



Bits.—Relates to harness bits of that type in which movable mouth-bars slide upon hard-metal pins bridging gaps in the cheeks. Instead of the bridle strap rings being made integral with the cheeks, they are carried at the summit of detachable hard-metal pins, which also serve as slides for the mouthpieces. In the form shown in Fig. 2, a steel or other hard-metal pin *c*, carrying the integral or rigidly-attached bridle strap ring *d*, is inserted through the upper hole *b^4* and screwed into the lower hole *b^5* of the loop *b^2* of the cheek piece *a*, so as to close the opening and also serve as a bearing for the mouthpiece *e^1*. Fig. 5 shows the invention applied to a "Liverpool" bit, and Fig. 4 shows a modification in which the pin is secured by a screw *g* passing through the tapped hole *b^6*, rotation of the pin being prevented by the flat-sided collar *c^3*. Other means of securing the pins may be employed, such as lateral set-screws, or they may be permanently fixed to the cheeks. According to the Provisional Specification, the pins are locked by a screw pin or other keeper.

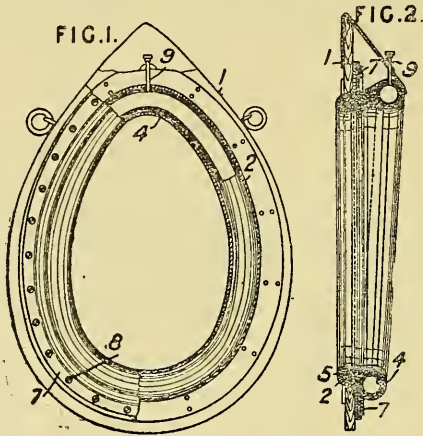
4345. Wright, C. E., and Leckie, J. Feb. 22.



Saddles.—In a wooden saddle-tree which is strengthened by metal plates riveted together with the wooden part between them, distance-pieces serving as short struts between the two metal plates are let into the intervening wooden part. Fig. 2 shows the tree of a riding-saddle in which

the head plate *a* and gullet plate *c* are separated by tubular distance-pieces *d* consisting of tubes filled with wooden plugs through which the rivets pass. The rivets may fit the tubular distance-pieces closely, the wooden plugs being dispensed with, or the distance-pieces may be solid and reduced at their ends to form the rivets.

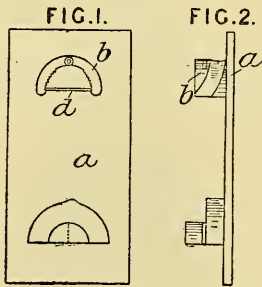
4833. Reismann, D. Feb. 27.



Collars, neck; lining and padding.—The wooden frame 1 of a horse-collar is fitted with a pneumatic pad 4, which is placed, along with straw padding 5, inside a leather casing 2, which is secured to the frame 1 by a ring 7 and screws 8. The pad is inflated through a valve 9.

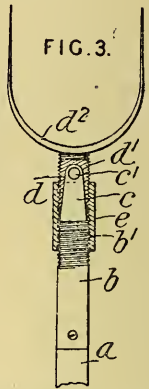
5054. Alten, Baron G. von. March 1.

Brackets for.—The various parts of harness are supported on brackets fixed to a back-plate *a* and provided with pivoted arms *b*. The arms are adjusted by a rod *d*, engaging in notches in the arms, so that the support corresponds in shape to the contact-surface of the harness. A lower block is fixed to the plate *a* for supporting the bridle and saddle, a groove being provided for the tail strap. The block may be provided with adjustable parts similar to the parts *b*.

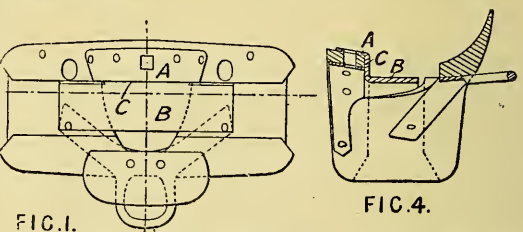


5498. Firkins, A. R. March 7.

Leaders for animals.—Combination stable implements consist of a single handle which may be used as a drenching-tool or bull leader and which can be detachably secured to a fork, shovel, pike, or like implement. The handle *a* has a metal cap *b* screw-threaded at *b'* and terminating in a projection *c* of non-circular section which engages a corresponding hole *d* in the neck *d'* of the head of a pike or other tool *d²*. The neck *d'* is screw-threaded to a sufficient length to permit a ferrule *e* to be screwed home upon it. The projection *c* has a hole *c'* so that the handle can be used as a bull leader by the attachment of a spring ring, or as a drenching-stick, by attaching a cord which is wound around a horse's nose. The head of a tool is securely locked to the handle by inserting the projection *c* in the hole *d* in the tool neck *d'* and screwing down the ferrule *e* on to the threaded end *b'*.

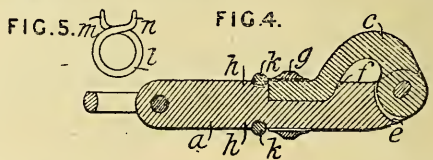


5706. Beebe, J., and Beebe, B. March 9.



Saddles.—The head plate *A* and back-band bridge *B* of a harness saddle-tree made in one continuous structure of wood or wood substitute are joined together by a vertical plate *C*, preferably formed integrally with the two parts *A*, *B* either by stamping from sheet metal or by casting.

5770. Barratt, G. W., Barratt, F., Barratt, A., Stennett, J. B., and Airey, J. March 9.

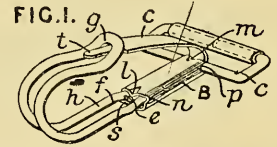


Fastening.—A hook for harness, pole chains,

&c. is constructed without the coiled or leaf springs usually used in such devices. A bar *a*, Fig. 4, has a hook *c* pivoted between two lugs *e*, the end of the hook being approximately straight to lie in a recess *f*. A sliding sleeve *g* retains the hook in position, and is locked by an elastic ring *k* fitting in a groove *h*. The ring *k*, if of rubber or the like, has preferably a strong tendency to return to its initial position when rolled, and is of such cross-section that it may make one complete revolution in moving to the unfastened position. The locking-ring *k* may be replaced by any equivalent device which must be moved before the collar *g* can be moved. A substitute for the rubber ring *k* is shown in Fig. 5, where *l* is a springy metal ring having crossed lugs *m*, *n* for the fingers.

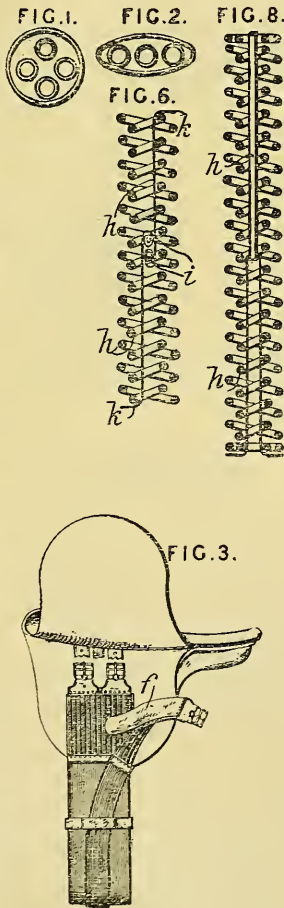
6301. Hubbard, R. W. March 23, 1905, [date applied for under Patents Act, 1901].

Fastening.—A snap-hook of the type having a spring tongue *C* is made from one piece of wire bent as shown. The shank *e*, which is spread open at the part *f*, forming shoulders *h*, is surrounded by the sheet-metal sleeve *B*, having notches *n*, *p* to receive the shoulders *h* and the inner bars of the eye *c*, and depressions *l*, *m* resting between the parallel wires. The spring tongue *C* passes through the sleeve *B* and has a narrow end *s* bent into the opening *f*. The end *t* is reduced in width and lies in the opening *g* of the hook.

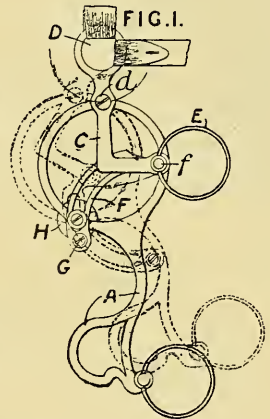
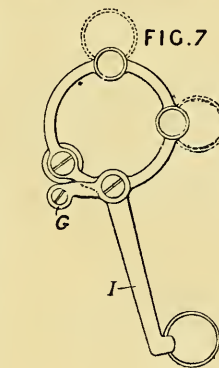


5830. Torley, H. March 10.

Saddles.—Compound springs for saddle girths are made of several helical springs of small diameter inserted bodily within a large spring as shown in cross-section in Figs. 1 and 2. To prevent the springs from being stretched beyond their elastic limit, metal bands *h*, Fig. 6, are inserted in the spring from each end *k*, and their inner ends rolled up and soldered at *i*. The ends *k* are turned over the ends of the spring. The ends *i* cannot slide past one another. In another method, the wires *h* are bent to U-shape, the lower one being inverted and interlocking with the upper one as in Fig. 8. Several such compound springs are arranged side by side on the girth and backed with a lappet *f*, Fig. 3.

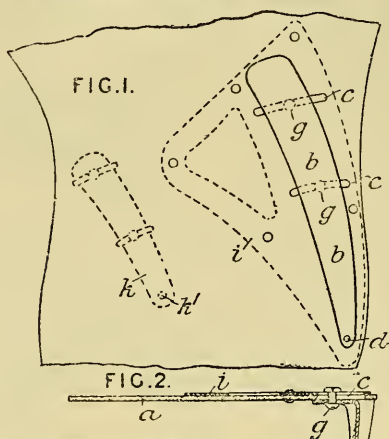


6421. Ciammaichella, G. March 16.

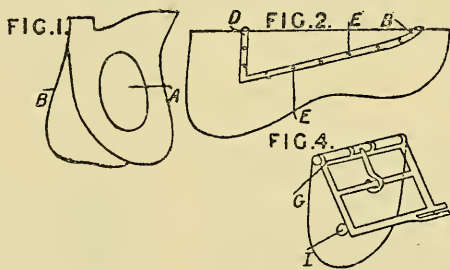


Bits.—The mouth-bar *H*, Fig. 1, of the bit is secured to the rings of the side pieces *A*, and is recessed at the underside *h*, Fig. 4, to receive the curb-bar *G*. The curb-bar *G* is formed with a ridge on the underside and is carried by slotted quadrants *F* pivoted at *f* to angular levers *C*, which are pivoted at *d* to the side bars *A* and carry rings *D*, *E* for attaching the head strap and driving-reins respectively. When the driving-reins are pulled, the curb-bar *G* is kept in the recess in the mouth-bar *H*, but, when the check reins are pulled, the side bars *A* pivot about the mouth-bar *H* and cause the lever *C* and quadrant *F* to move into the position shown by dotted lines in Fig. 1, the curb-bar being drawn by the quadrant *F* along the ramifications of the chin nerve. In a modification shown in Fig. 7, the action of the check reins is independent of the driving-reins, and the curb-bar *G* is secured to a cranked lever *I* to which the check reins are attached.



6591. Finnigan, T. K. March 19.

Saddles.—Knee pads *b* for saddles are attached to a plate *e* pivoted at *d* to the saddle flap and adapted to be adjusted to suit the rider. The saddle flap *a* and a strengthening metal plate *i* are formed with longitudinal slots *c* in which can slide the bolts *g* connecting the plate *e* to the flap *a*. The pad *b* is secured in any desired position by tightening the bolts *g*. An additional pad *h*, pivoted at *h'*, may be provided if desired.

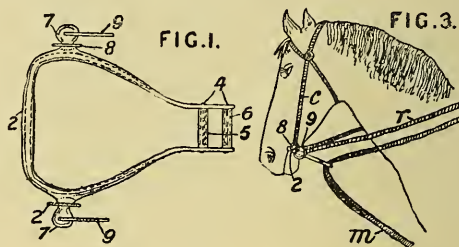
6779. Orpwood, W. L. March 21.

Saddles; pads for; ventilation.—Saddle flaps are formed of two thicknesses of leather, and the upper layer is cut away at *A*, Fig. 1, and a piece of india-rubber inserted. The india-rubber is secured to the lower layer and comes level with the upper layer. When only one thickness of leather is used, the centre part *A* is cut away and the india-rubber fixed in its place. The flap is ventilated by a tube *D*, which passes through the interior of the lining and is pierced with holes *E* at intervals. The stirrup strap is secured by a buckle *G* hinged to a plate secured by a pin *I* to the saddle, or a loop may be provided for the stirrup strap in place of the buckle *G*.

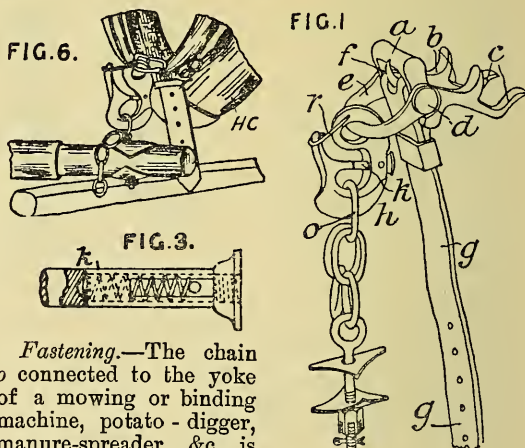
7422. Sutcliffe, A., [Gardner, W.]. March 27.

Bits; martingales; controlling restive animals.—

The ends of the mouthpiece 2 of a bit are curved backwards and welded together, or connected by pins 4 on which are mounted rollers 5, 6. The bit is formed with studs 7 through which are passed

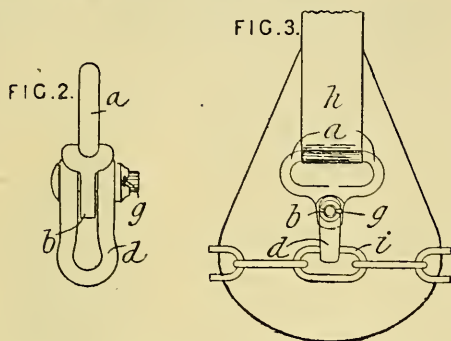


the rings 8, 9 for the cheek strap *c* and the driving-rein *r* respectively, so that the bit hangs in the position shown in Fig. 3. Instead of passing the ring 8 through a slot in the stud 7 the ring is made with flattened sides to engage with a rectangular portion of the stud 7. The martingale *m* passes between the rollers 5, 6 and is divided and connected to each of the reins *r*, or is carried by the rider. The lower end of the martingale is secured to the girth or to straps connected to the breeching so that the animal is prevented from kicking.

7426. Owen, W. March 28.

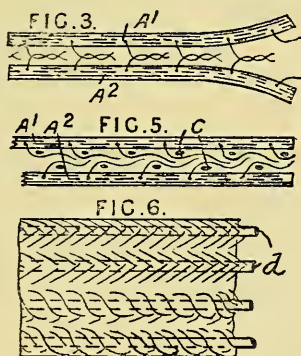
Fastening.—The chain *o* connected to the yoke of a mowing or binding machine, potato-digger, manure-spreader, &c. is secured to the collar by a strap *g*, which surrounds the collar and is secured in position by the tongue *f* of a buckle *a*. The buckle has curved parts *b* which fit the forewale of the collar *HC*, Fig. 6, and parts *c* which receive the strap or chain connecting the hames to the collar. A D-shaped link *e* fastened to the pin *d* of the buckle *a* connects the buckle to a hook or shackle *h* to which the links *o* are attached. A spring bolt *k*, Fig. 3, serves to prevent the chains from coming out of the shackle, and a wire loop *r* prevents the reins from entering and becoming entangled with the shackle. The metal forming the lower part of the hook is preferably blade-shaped, so as to prevent the chain from rising and striking the bolt *k*.

7427. Owen, W. March 28.



Traces; backbands; fastening.—A trace chain *i* for use with ploughs, mowers, and the like is supported from the backband *h* by two metal loops *a, d*. The lower loop *d* is pivoted to the tongue *b* of the loop *a* and secured thereto by a pin or cotter *g*.

7744. Gallsworthy, F. March 31.

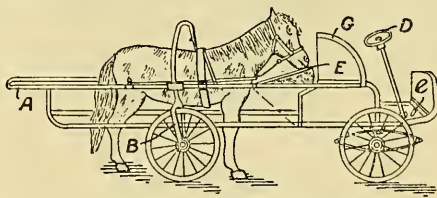


Straps and bands; traces.—Leather, hide, &c. with the hair left on is employed in the manufacture of harness, traces, &c. Two strips of leather &c. are joined, hair inwards, by means of cement, preferably with a basis of india-rubber. The strips *A¹, A²* may have an intermediate layer or layers of wire netting, canvas, &c. *C*, Fig. 5, or of longitudinal cords *d*, Fig. 6, the hair being drawn between or over the strands. Instead of two strips, three or more, with or without canvas &c., or one strip with canvas, may be used, the hair being inside in each case. The strips may then be sewn and riveted.

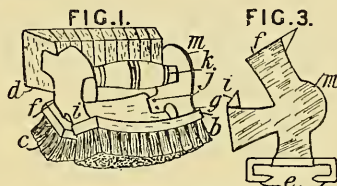
8069. Bonmarchand, A. C. April 3.

Harnessing, systems of; spurs and spur-carriers; bridles.—A four-wheeled vehicle is pushed by a horse harnessed between the side members *A* of a frame projecting rearwardly from the driver's seat *G*. The hind wheels are mounted in forks *B* connected by an arch over the horse's back. The horse is stopped by depressing a pedal *e*, thereby raising a disk *E* in front of the horse's head.

Pedal-operated spurs are mounted inside the frame *A*.

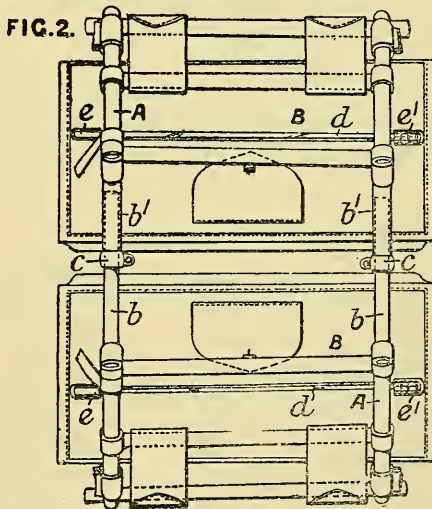


8212. Reed, W. J. April 5.



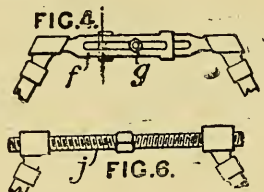
Cleaning and polishing, apparatus for.—To each end of a handle *k* is fixed a plate *m* having projecting arms *i, g, f, j*, to which are attached brushes *b, c*, as shown, and also arms for supporting a pad, which may be of strips *d* of felt. If an ordinary pad is used, it is kept in position by means of hooks *e* projecting from the arms. The attachments are used in turn, one brush being used for removing dirt, the other for applying the paste or the like, and the pad for putting on a final polish. To the ends of the handle a small brush and a scraper may be added.

8217. Morgan, C. E. April 5.



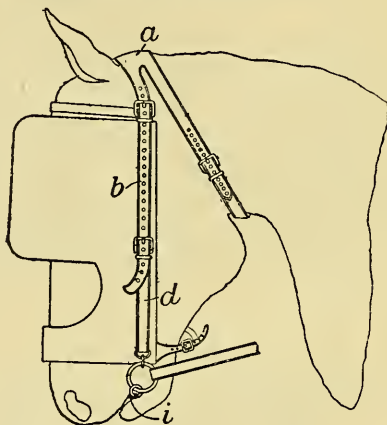
Saddles.—The tubular side bars *A* of a pack-saddle are detachably connected together at the top by sliding connexions, so that the width of the saddle may be adjusted, and the sides of the saddle may be easily taken apart to facilitate packing of the saddles. The horizontal bars *b*, fixed to one side of the saddle, slide in corresponding tubes *b¹*,

and are secured by clamps *c*. Fig. 4 shows a modified arrangement in which slotted bars *f*, adapted to slide on one another, are secured by a



bolt *g*, and Fig. 6 shows a screw pin *j* for connecting the two sides of the saddle. The pads *B*, Fig. 2, are secured by pockets *e*, *e'* to the ends of cross-bars *d* on the frame of the saddle.

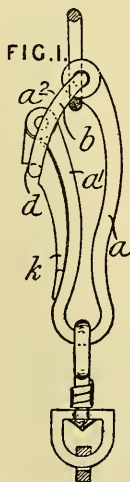
9144. Owen, W. April 18.



Bridles.—The bridle is constructed so that the strap carrying the bit is not connected to the nose-band. The bit *i* is suspended from a strap *b* of the head piece *a* by a strap *d*.

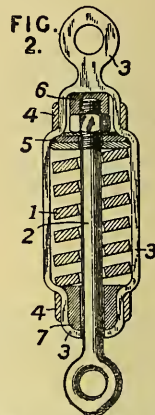
9433. Knothe, B.
April 21.

Fastening; tethering animals.—A hook or coupling for collar chains, neckbands, &c., for securing cattle in stables and for similar purposes, consists of a loop *a*, *a'* having an opening *a''* closed by the link *b*, pivoted to the branch *a* and engaging a recess *d* in the locking-lever *k* pivoted to the branch *a'*. The link is retained by the elasticity of the loop *a*, *a'*, and is opened by pulling the lever *k* away from the branch *a'*.

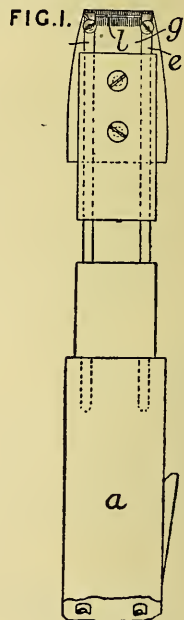


9519. Polzot, E. April 22, 1905, [date applied for under Patents Act, 1901]. No Patent granted (Sealing fee not paid).

Fastening, spring attachments for. A draw-spring for easing the strain of a horse in starting to draw a load from rest or for like purposes is formed by a steel spring 1 or a number of rubber washers threaded on a central draw-bolt 2 and enclosed in a casing 3, which is made in halves held together by two rings 4, driven tightly on, or by soldering. A rubber block 6 and a rubber washer 5 deaden the rebound of the spring. The filling-piece 7 is preferably made of hard wood.

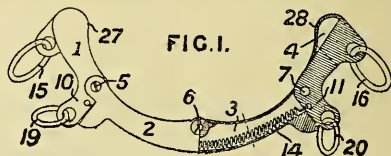


10,083. Sargent, W. April 30.



Horse-clippers and the like.—An electric singeing-apparatus for removing superfluous hair comprises a comb *g*, Fig. 1, of refractory material, and a fine wire *l* stretched between two terminals *e* connected to a handle *a*.

10,387. Arnaud, A. May 3.



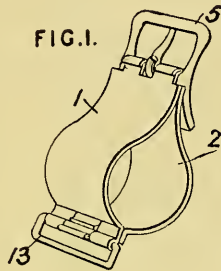
Bridles; stopping and controlling runaway and restive animals.—Horses and other animals are

controlled by means of a throat band jointed at 5, 6, 7, so that the windpipe is compressed from the sides and also from below. The throat band consists of tubes 1, 2, 3, 4 which are kept in the open position by a spring 14 attached to the heels 10, 11 of the tubes 1, 4. The tubes 1, 4 are provided with contact-pads 27, 28 which press

against the windpipe. The device is connected by rings 15, 16 and a narrow strap to the headstall. Reins connected to rings 19, 20 are passed round pulleys on the strap and on the ends of the bit to the pommel of the saddle, or to a place within reach of the driver, being fixed to the guiding-rein if desired.

10,518. O'Connell, J. May 4, 1905, [date applied for under Patents Act, 1901].

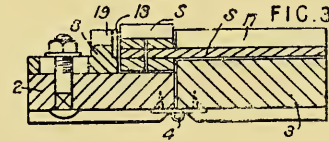
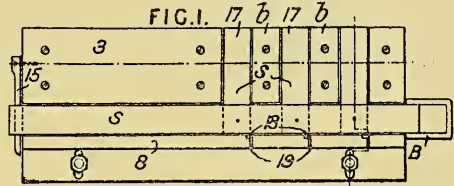
Tugs, shaft.—The tug consists of two members 1, 2, hinged together by a stop hinge at their lower ends on one side bar of the strap loop 13. The upper end of one member carries pivotally a buckle 5, the end of the other member being bent over to form hooks engaging the end of the first member. The buckle serves as a lever to keep the two ends in engagement.



10,676. Henry, G. M. May 9, 1905, [date applied for under Patents Act, 1901].

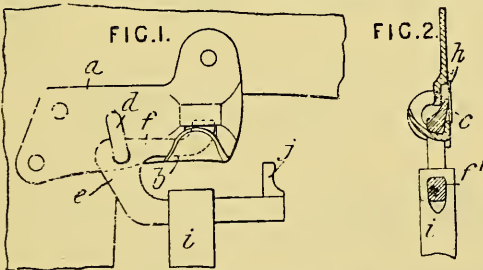
Fastening hames, straps for. A former or clamp for use in making hame straps consists of two sections 2, 3, hinged together at 4, and an adjustable angle-bar 8, between which and the section 3 the

straps S are held. Spaces 17, between blocks b screwed to the section 3, receive the straps s for forming the guide-loops, and notches 19 are made in the bar 8 for facilitating accurate placing of the



loops. Recesses 18 are provided for use when metal loops are fitted. One end of the strap S is held by the buckle B coming against the end of the sections 2, 3, and the other end is held by a pivoted bar 15.

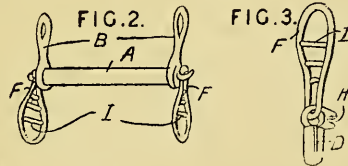
11,017. Hunter, S., and Heap, L. May 11.



Stirrup straps, suspending.—A safety saddle-bar e, provided with two arms f, f', is secured to a ring d on a plate a which is formed with an upturned lip b and a recess c. The upper arm f rests normally on the lip b and is provided with a projection which enters the recess c and wedges between the lip b and the lip of the recess. A spring plate h may press against the projection to prevent rattling, and the lower arm f' may be upturned or provided with a thumb-piece j. Should an accident occur,

the bar is rotated on the ring d by the pull on the stirrup strap i, and the projection is released from the recess.

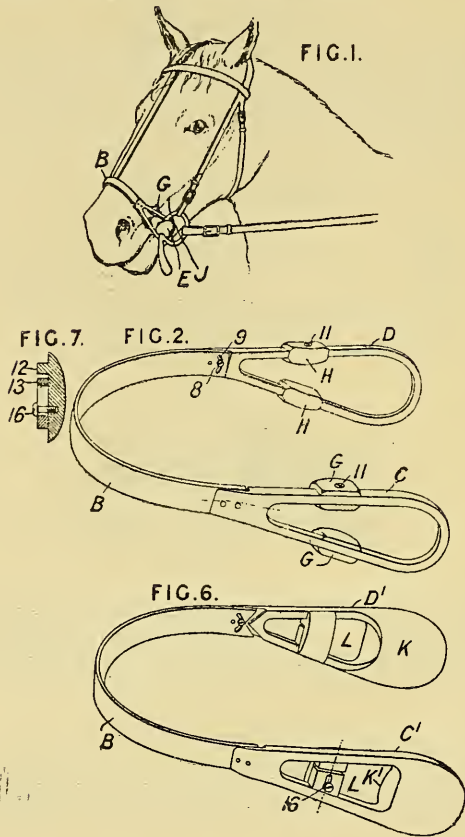
11,095. Falls, C. H. July 29, 1905, [date applied for under Patents Act, 1901].



Bits.—The bit is formed of a piece A, Fig. 2, of hollow metal with integral snaffles B for attaching the cheek straps. The rein loops F, provided with cross-bars I, for adjusting the jaw strap, are attached to split plugs D, Fig. 3, which frictionally engage in the metal bar A. The split plug D is provided with a saddle H having a groove for the

reception of one side of the rein-loop F when the device is used as a curb bit. One side of the saddle H is slightly tapered and engages a corresponding recess formed in the end of the bit.

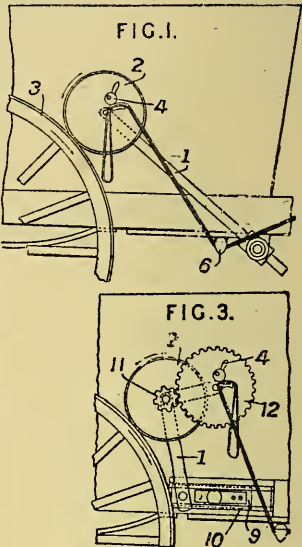
11,385. Flynn, P. H. May 15.



Bridles; stopping and controlling runaway and restive animals.—Horses are controlled by pressure exerted on the upper or lower nerves and muscles of the jaw, such as J, Fig. 1. The pressure is exerted by blocks G, H, Fig. 2, carried by loops C, D, which are adjustably connected by a slot 9 and screw 8 to a steel or other flexible noseband B. The blocks may be adjusted on the loops by screws 11. The loops are connected to the ordinary curved or jointed bit E, Fig. 1, and the pressure is applied by means of the reins. In a modified construction of the controller, shown in Fig. 6, the ends of the loops C', D' are provided with pads K, K', adapted to press on the nerves of the lower jaw, while a single block L on each loop is provided in place of the two blocks G. The block L is formed of the parts 12, 13, connected together and secured in any position on the loop by a screw 16.

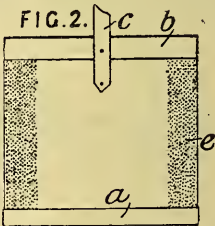
11,741. Breen, M. May 19.

Stopping and controlling restive animals; rein-holders.—The reins are placed, during the absence of the driver, in a clamp 4, placed eccentrically on a roller 2 carried by a pivoted lever 1 which is balanced so that the roller 2 is normally out of contact with the vehicle wheel 3. When the reins are passed over a bracket 6 on the vehicle and secured in the clamp 4, the roller is brought into contact with the vehicle wheel, and any forward movement of the horse causes a pull on the reins. In order that the pull may be less sudden, the clamp 4, Fig. 3, may be placed on a plate 12 gearing with a pinion 11 on the roller 2. In this form, the lever 1 is pivoted to a plate 9 sliding in guides 10 on the vehicle.



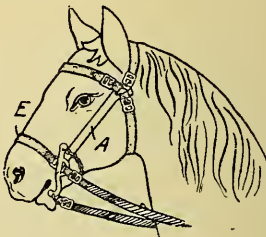
12,006. Partington, D. May 23.

Nosebags.—The food is contained in a metal holder e perforated over the whole of its upright surface and suspended from the animal's head. The holder e is fitted with metal bands a, b, and the suspending-straps c are passed through loops placed on the inside of a cover of coco-nut matting (not shown).



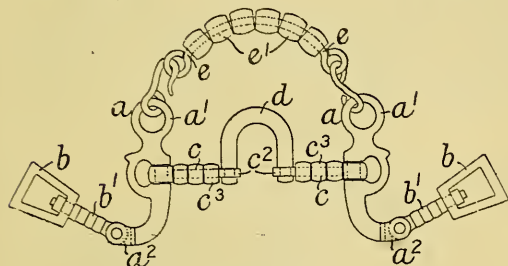
12,287. Sexton, G., [known as Leon, L.], and Blackford, J. H. May 26.

Bridles.—The rigid side bars A, used with bitless bridles in place of the cheek straps of an ordinary bridle, are formed at the upper end with a loop whereby the head, throat, and forehead straps are directly connected to the bars. By this means, the guiding noseband E,



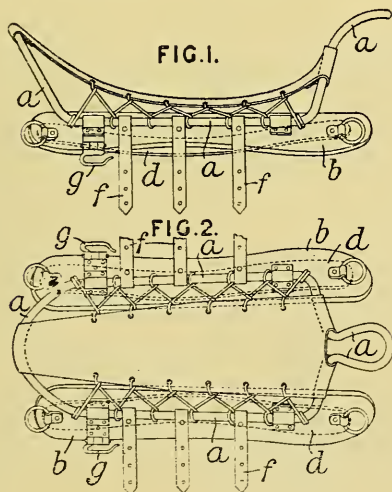
which is attached to the lower end of the bars A, is prevented from being displaced.

12,358. Innes, G. Rose-, Kay, A., and Barthes, A. E., (trading as Rose-Innes, Kay, & Co.), [Saelzer & Schwarzenberg]. May 28.



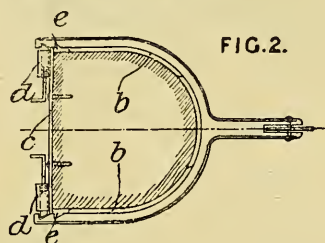
Bits.—The side bars *a* of a bit are formed of a flat bar having an eye *a*¹ to which the cheek straps are attached, and a hinge connexion *a*² to which is attached a rod *b*¹ carrying the swivel links *b* for the reins. The mouth-bar is formed of side parts *c* carrying metal rollers *c*³ and of a central part *d* connected to eyes *c*² on the parts *c*. The curb *e* is provided with rollers *e*¹ and is attached to the eyes *a*¹.

12,375. Szameitat, C. May 29, 1905, [date applied for under Patents Act, 1901].



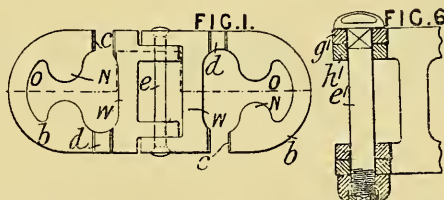
Saddles.—The ends of the front and rear forks *a* of a saddle-tree having spring saddle-bars are connected together by longitudinal parts to form a rigid tree, or the two forks are formed as a single hoop. The saddle-bars *b* fitted with arched blade springs *d* are hinged to the tree, and the girth straps *f* and stirrup bars *g* are secured to the longitudinal parts of the tree.

13,396. Schwarz, K. June 11.



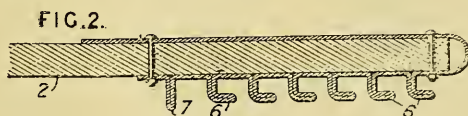
Spurs.—The spur is fixed by spring bolts *d*, which are fitted on a plate *c* on the front of the boot heel, and engage notches *e* in the front ends of the sides of the spur which embrace the heel. The spur is guided into position by knife-edges *b* on its sides, which engage in the crease between the heel and upper of the boot.

13,898. Tibbitts, J. June 18.



Fastening.—A hook or shackle for harness &c. comprises two links *b* pivoted on a link *e*, and adapted to be folded together so that projections *d* occupy slots *e* in the opposite parts. Each part of the hook is reinforced by a bridge-piece *W*. Projections *N* form an additional safety device. Instead of being of the form shown, each half of the hook may have a projection extending half-way across the loop *b*, so as to close the chamber *O* when the two parts of the hook are placed together. Fig. 6 shows a modification in which the pin *e*¹ has a square neck engaging square openings in the eye *g*¹ and half-way through the eye *h*¹. The two parts of the hook are locked in the closed position by tightening a nut, which is retained on a pin by a washer riveted on a square end of the pin.

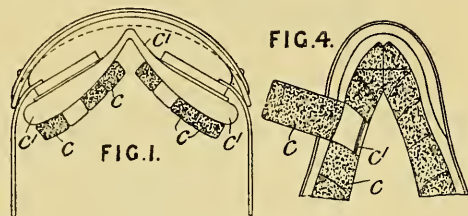
14,095. Harral, J. B. June 19.



Fastening neck yokes. A device, to be attached to the tongue or pole 2 of a vehicle, for the purpose

of adjustably retaining the neck yoke thereon, is made of a single strip of metal bent into a loop. On the underside, suitably spaced hooks 6 and a guard 7 are formed by bending the strip back upon itself, as shown.

14,291. Barber, W. June 22.



Pads for ; collars, neck ; saddles.—The pads for saddles, collars, and other parts of harness are formed in sections *c* so that any section may be removed as required. The pads are secured to a leather &c. backing *c'* by a cord or an equivalent passed through the backing *c'* and secured on the reverse side.

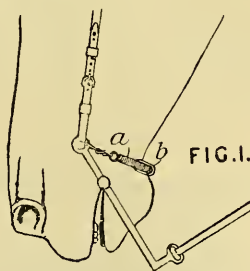
[Reference has been directed under Patents Act, 1902, to Specifications No. 3360, A.D. 1875, No. 11,260, A.D. 1893, No. 10,920, A.D. 1897, No. 19,592, A.D. 1899, and No. 1913, A.D. 1903.]

14,455. Nicholson, J. R., and Giles, J. June 25. *Drawings to Specification.*

Curry-combs.—The nozzle of a vacuum cleaning-apparatus has a trumpet-shaped extremity across the mouth of which runs a bar which can be either plain or serrated ; in the latter case it is applicable for grooming horses.

14,515. Egger, F. June 28, 1905, [date applied for under Patents Act, 1901].

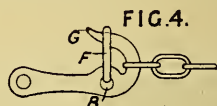
Bits.—Relates to curb chains of the kind in which the central portion is formed of a round helical spring *a* so that it can yield within predetermined limits, when undue tension is placed on the reins. A soft elastic covering *b* on the spring prevents the coils of the spring, when it contracts, from pinching the chin of the horse.



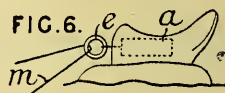
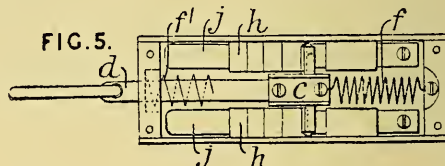
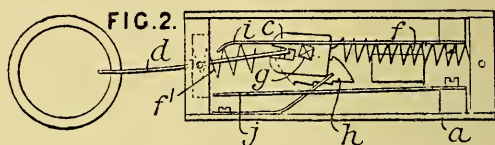
15,632. Hine, C. July 10.

Fastening.—A hook for harness &c. is fitted with a safety ring or loop *F*, pivoted in a hole *B* and engaging the end of the tongue *G* or a lug on the underside of the tongue.

[Reference has been directed under Patents Act, 1902, to Specifications No. 7269, A.D. 1899, [Abridgment Class Chains &c.], and No. 9107, A.D. 1901.]



16,448. Gaubert, J. July 20.



Controlling restive animals ; terrets.—The bearing-rein *m* is passed through a ring *e* attached to a box *a* placed within the pommel of the saddle. The ring *e* is connected to a flexible strip *d* carrying a slider *c*, on which are mounted projecting teeth *g*, which are held by springs *i*, *j*, in contact with racks *h* at the sides of the casing *a*. A spring *f* is attached to the slider *c*, and another spring *f'* surrounds the strip *d*. If the horse attempts to get the bit between his teeth and draws the ring *e* forwards, the pins *g* slide over the upper face of the racks *h*. The teeth of the rack prevent the pins *g* from moving backwardly until they have reached the end of the course, when the springs *f*, *f'* return the slider along the lower face of the racks *h*. During this return movement of the slider, any pull on the ring *d* is checked by the pins engaging with the teeth of the rack. This series of movements of the slider frees the jaw in a manner similar to the action of the rider's hand in restraining a horse.

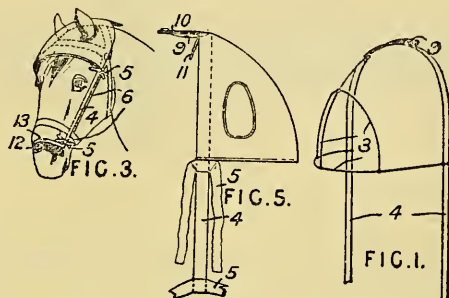
17,406. Arthurs, S. B. Aug. 2. *No Patent granted (Sealing fee not paid).*

Training and breaking in horses.—In an apparatus for training and breaking in horses, a mast 1, Fig. 2, is mounted on a socket plate 2 and supported by

guy ropes 6, and a pulley 34 is secured to the mast to drive a belt 36 for transmitting power to a machine. The horses are secured between bars 18, Fig. 1, carried by radial arms 14, which are secured

is provided to stop the rotating mast at any time. The two ends of a band 27, Fig. 5, are secured to a bar 28 carried by a spindle 30 mounted in the rotating framework. When the spindle 30 is turned, the band 27 is tightened around pulleys 26 carried by fixed uprights 25. The apparatus is made preferably of metal tubing, and the parts are arranged so as to be easily put together.

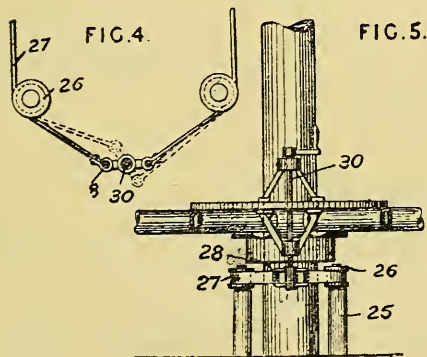
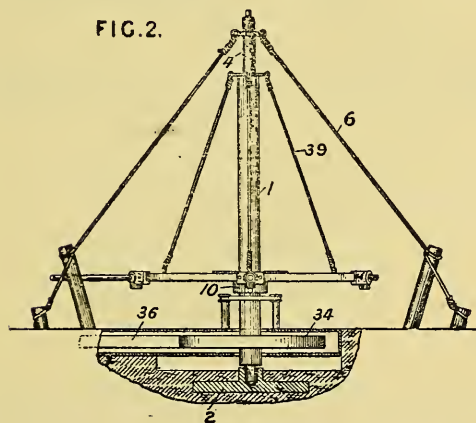
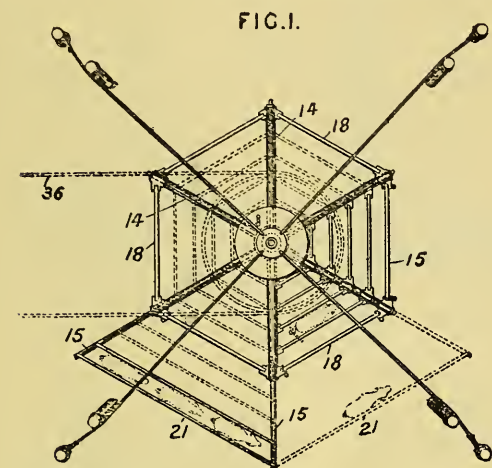
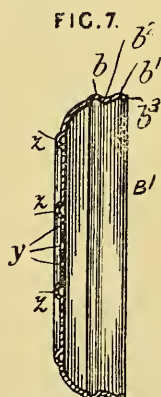
17,524. Stephens, R. J. Aug. 3.



Sun screens.—A sun-bonnet for horses &c. is made of canvas or the like stretched over a frame 3, Fig. 1, secured to side pieces 4 which are tied by tapes 5, Fig. 3, to the bridle 6 in such a position as to hold the bonnet clear of the horse's head. A noseband 13 with a fringe 12 may be fitted to the lower ends of the pieces 4. A flap 11, Fig. 5, is suspended from the back edge of the bonnet to assist in creating a draught. A receptacle 9 with a cover 10 is provided to contain a disinfectant or deodorant to disperse flies &c.

17,919. Lake, H. H., [Sanitary Feed Bag Co.]. Aug. 9.

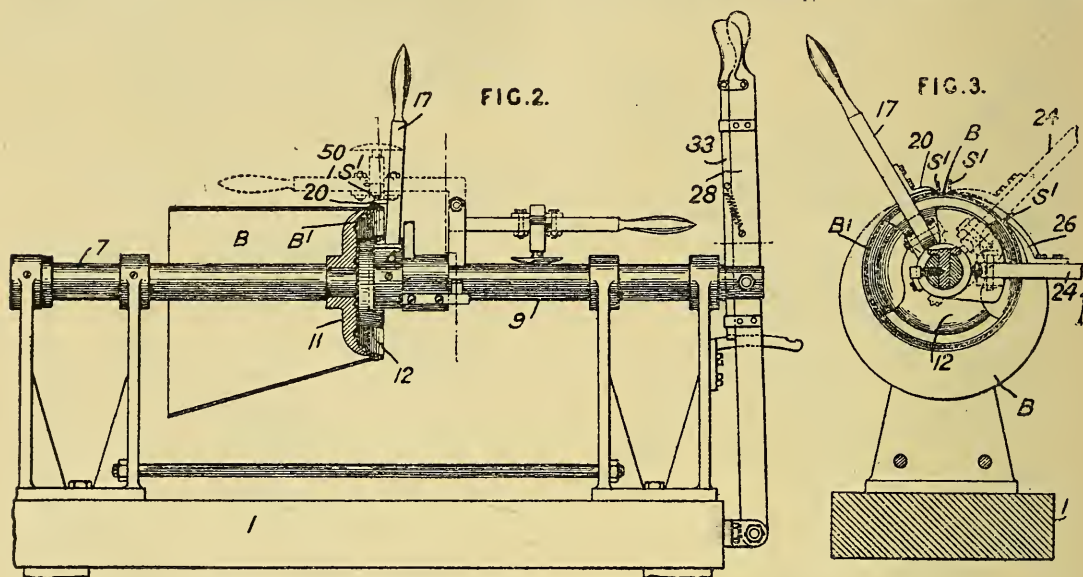
Nosebags and food containers.—A bag or container for use in feeding animals or otherwise has a flexible body and a rigid dished bottom B', Fig. 7, between rims b, b' on which the body is held by a ring or binder united at the ends by a link. The bottom may have bearing-ridges z and ventilation holes y. Figs. 2 and 3 show a machine for securing the bottom B' to the bodies B. The frame 1 holds in uprights a fixed bar 7 and a bar 9 which can be moved horizontally by a lever 28 having a slide locking-bar 33. The body B is placed over the clamping-member 11 so that its lower edges encircle the flange of the bottom which is held in the clamping-members 11, 12. The binder,



to a collar 10, Fig. 2, on the mast and supported by ropes 39. The arms 14, Fig. 1, are made with telescopic extensions 15 to which bars 21 can be attached, so that the horses may be put in tandem. A brake

which is a strip of metal rectangular in section with its ends bent up at right-angles, is then placed round the bottom and the body of the bag, and the turned-

up ends S^1 , S^1 are placed in the side projections 20, 26 of the levers 17, 24. By operating the lever 24, the binder is tightened, the lever assuming the



position shown in dotted lines in Fig. 3. The operator then places over the ends S^1 a link of metal, and, by actuating the lever 50, Fig. 2, the link is

pressed home and the ends turned down, making all secure. The levers are then turned back and the body of the bag is turned inside out.

18,038. Fleming, F. G., and Baird, W. Aug. 11.

FIG. 2.

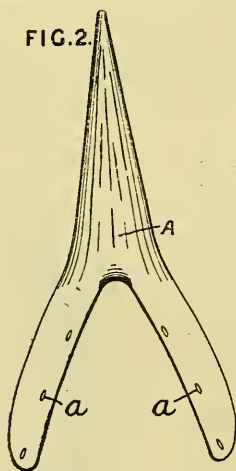
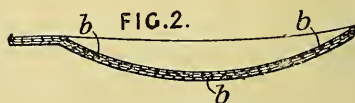


FIG. 3.



Collars, neck.—The high top A of a cart-horse collar is formed of a sheet of metal, blocked to the ordinary shape and secured at a to the sides of the collar b . The top may be lined with a thin layer of paper or leather.

18,258. Davidson, J. E. Aug. 14.

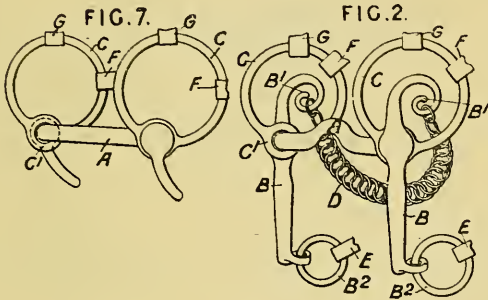


Bridles.—Blinkers for horses, mules, and other animals are made from thin layers b of wood united together by waterproof cement and moulded to the desired shape, each layer having the direction of the grain across that of the adjoining one. Canvas may be inserted between the layers to prevent the wood from breaking, when being moulded or attached to the bridle.

18,657. Swales, F. Aug. 20.

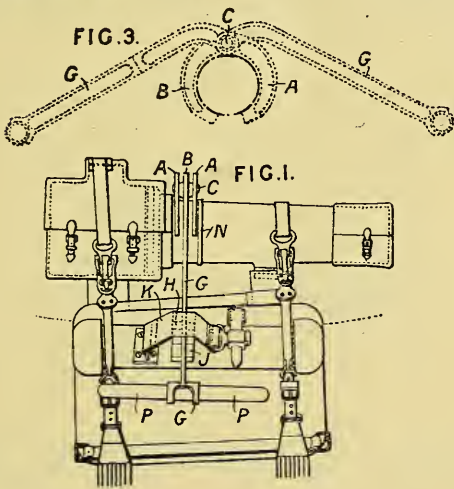
Bits.—The mouthpiece A of the bit is supported in eyes C' in the snaffle rings C, to which the head straps G and the reins F are attached. The side bars B, rigidly secured to the mouthpiece A, are made comparatively short and at their upper ends are formed with volute hooks B' to which the curb D is attached. The curb reins E are attached to rings B' at the lower end of the side bars. By this means of supporting the bit from the head piece, a pull on the curb reins E does not draw back the bit and consequently does not cause pressure on the top

of the animal's head. When the bit is used as a snaffle, the mouth-bar A, Fig. 7, is formed with



any suitable side pieces or an extra ring may be employed.

19,441. Beardmore & Co., W., and Banks, A. Aug. 31.

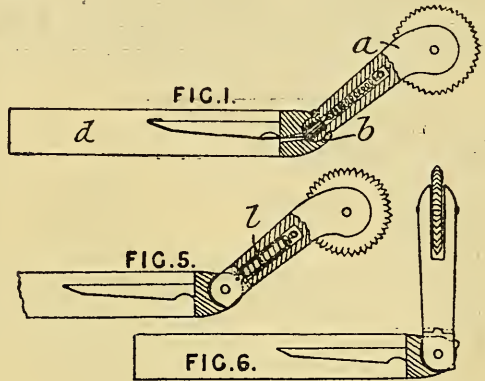


Saddles.—An implement for lifting ordnance on and off pack saddles comprises a pair of curved jaws A, B, adapted to embrace the gun section and provided with levers G to which handles P are fixed. The jaws are pivoted at C, and one of them is bifurcated to allow the other to pass through. The levers G are secured to the saddle, ready for lifting off the gun section, by a pin H on each lever, which fits into a slot in a plate J on the saddle, and by straps K passing over the levers.

19,779. Sandner, E., and Uhlig, P. Sept. 5.

Spurs.—The neck carrying the rowel is movable relatively to the yoke of the spur, so that it can yield if it encounters excessive resistance or can be folded flat against the heel of the boot if desired. In the

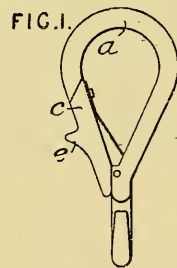
arrangement shown in Fig. 1, the neck *a* and yoke *d* are connected by a ball-and-socket joint *b* and drawn together by a spring, which holds the neck normally in its operative position but permits it to



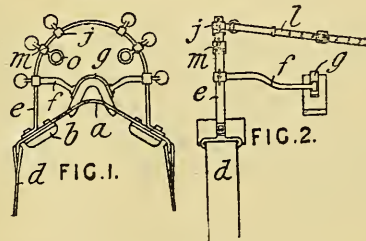
yield to any resistance. In the arrangement shown in Fig. 5, the neck fits on to a pin *l* hinged to the yoke and is held in place by a spring. It can be turned through a right-angle and folded upwards against the boot as shown in Fig. 6, notches being formed in the lower end of the neck to engage pins or projections on the hinged piece and on the yoke, for holding the neck in its two positions.

21,127. Cannon, T. M. Sept. 24.

Fastening.—The arm *c* of a spring hook *a* for harness &c. is formed with a projection *e* or a recess to facilitate opening. The projection may consist of a screw head, or the arm *c* may be formed of wire which is bent into a loop or hump.



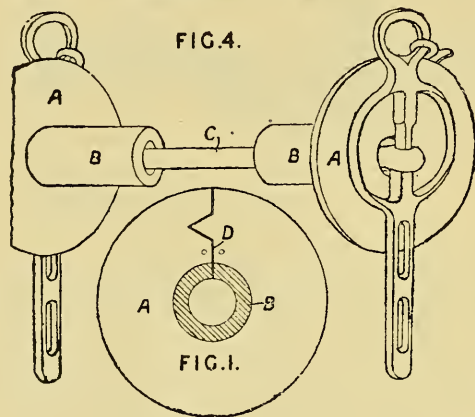
21,263. Rasmussen, H. Sept. 25.



Horse breaking and training harness; terrets.—In

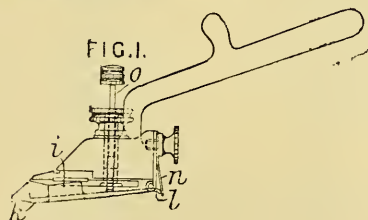
an apparatus for training and breaking horses, a metal plate *a*, provided with pads *b* and secured in position by the girth *d*, carries a bow *e* which supports a wither pad *g*. The arms *f* connected to the pad are adjustable on the bow *e*, and the reins *l* are attached to adjustable lugs *j*. On the bow *e* are also fixed two displaceable lugs *m*, having rings *o* through which driving-reins may be passed.

21,841. Turner, W. Oct. 3.



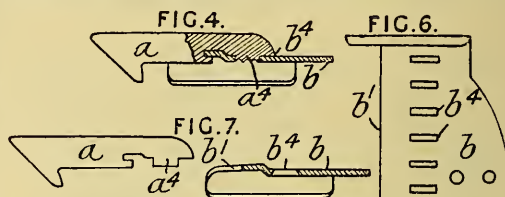
Bits.—The bit is provided with a cheek ring *A*, which is formed with or has secured to it a tubular portion *B* of india-rubber, which fits over the ordinary mouthpiece *C* and protects the bars of the mouth. The ring, which may be made of india-rubber, soft metal, leather, &c., is slit at *D* so that it can be sprung on the mouthpiece *C*.

21,852. Klein, R. Oct. 3.



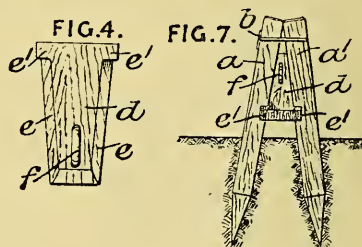
Horse-clippers and the like.—In clippers of the type having a hinged regulating-comb *b* adjusted by a set-screw *o*, the comb is formed with a projecting heel *l* in contact with a spring *n* adapted to hold the comb firmly in either the closed or the open position. The comb has upturned side pieces *i* on which a scale may be marked to indicate the height of the cut.

22,596. Twigg, A. C., and Warren, H. C.,
[trading as Twigg & Son, G.]. Oct. 12.



Horse-clippers and the like.—In detachable adjustment combs in which the teeth are formed separately of sheet metal and are attached to a body plate *b* having an unbroken front edge, the teeth *a*, Figs. 4 and 7, are shaped to fit over the edge of the plate and have projections *a'* which are riveted into holes *b'* in the plate. The front edge *b'* may be turned up to form a guard-flange, or it may be formed with a beading. The Provisional Specification also describes a modification in which the teeth are strung on to the body plate and secured by a spacing-plate.

23,008. Pollard, A. R. Oct. 17.



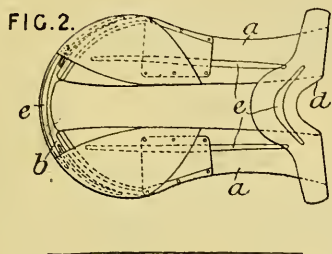
Tethering animals.—A device for tethering horses or for other purposes comprises two wooden or other pegs *a*, *a'*, Fig. 7, which are driven into the ground at an angle to one another, and are fastened together at the top by a metal ring *b*, which is pivotally secured to one peg *a* and engages with a recess in the other. The cord &c. to be secured is fastened to a hook *f* or the like on a wooden or other piece *d*, which is shown separately in Fig. 4 and is formed with inclined and bevelled sides *e*, which engage between the pegs *a*, *a'* and with projections *e'*, *e'* which act as stops.

23,634. Mills, C. K., [Guillaume, R.].
Oct. 24.

Saddles.—In a sheet-metal saddle-tree, the pommel plate *d*, side plates *a*, and cantle *b* are formed with strengthening-ribs *e*, which taper from the middle towards the ends.

(For Figure see next page.)

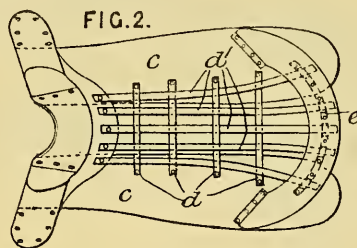
23,634.



strips d' being fixed at either the forward or rear end, and being able to slide in guides e at the free

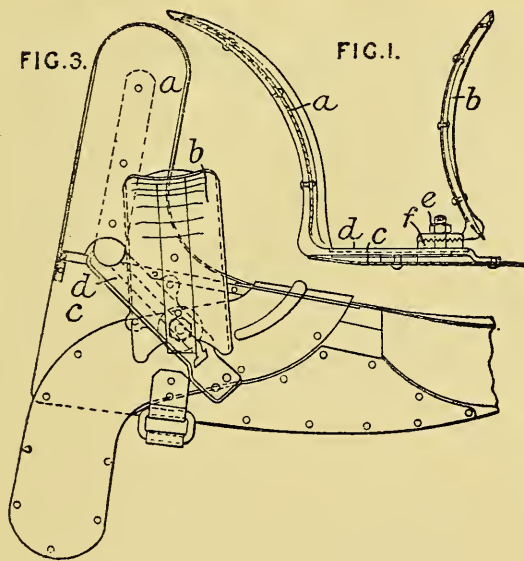
23,635. Mills, C. K., [Guilleaume, R.].
Oct. 24.

Saddles.—The seat plate of a saddle is formed of a number of interlacing strips d , d' of steel, the



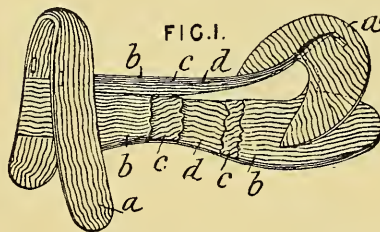
end. The strips d are fixed at one or both ends to the side plates c , or both ends may be free to slide in guides on the side plates.

23,637. Mills, C. K., [Guilleaume, R.].
Oct. 24.



slotted guide d fixed to the side plate. The base f of the head b is formed in two parts having interlocking teeth, so that the head may be turned in any direction when the screw e is loosened. In a modified form, the near-side head a is made adjustable and the head b is fixed.

24,212. Edwards, A. E., [Internationales
Patent-und Maschinenges. R. Lüders]. Oct. 30.



Saddles.—In a side saddle, the near-side head a is fixed to the side plate c of the saddle-tree, and the leaping head b is capable of being adjusted in a

Saddles.—The side bars of riding saddle-trees are formed of layers b , c , d of pressed wood, and the fibres of the middle layer c run obliquely to those of the other layers. The forks a , a' consist of pieces of pressed and bent wood, arranged so that the fibres run in the direction of the main curve of the forks.

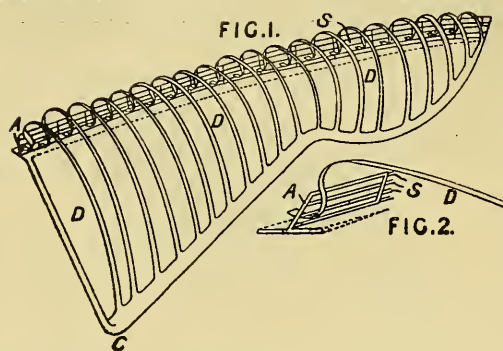
24,512. Harber, A. F. Nov. 2.

Pads for; saddles; collars.—A spring pad for the panels of saddles comprises a number of curved blade springs D fixed at the lower end to a rim C screwed to the tree, while the upper end extends

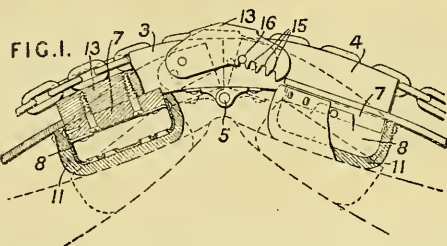
into one of a series of slots S in the web of a T-bar A fixed to the top of a saddle-tree. The spring can be adjusted by placing the upper ends of the blades in a higher or lower slot S as required. The spring can be used for the pads of saddles and collars.

(For Figures see next page.)

24,512.

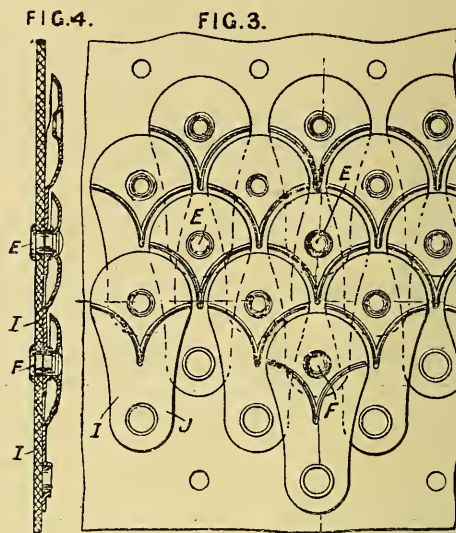


24,713. Theobald, G. J., Reed, A., and Reed, H. H. Nov. 5.



Saddles.—The sides 3, 4 of an adjustable harness saddle are hinged together at 5, and the parts are secured in any position by a pivoted catch 13 provided with notches 15 which engage with a pin 16 expanding from the part 4. The pad consists of a hollow perforated member 8 of metal, which is secured to the pad support 7 and may have a padded face 11.

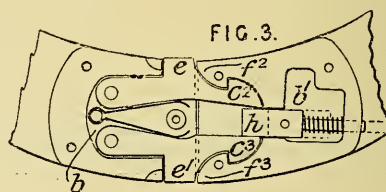
25,275. Miesch, F. W. A., and Fisher, M. Nov. 9.



Knee-caps.—Puncture-proof fabrics for horses' knee-caps and for other purposes are formed by an arrangement of pear-shaped metal plates in rows upon canvas, Fig. 3, the plates in each row being arranged between and overlapping the plates in the preceding row. Each plate is secured by two rivets E, F, Fig. 4, each of which passes through two plates. The portion of each plate exposed in the finished fabric is of dome shape, the overlapping sides I, J are somewhat rabbeted, and the central rivet holes are countersunk. The rivets are passed through from the back, and each is formed with a shoulder against which the exposed end of the plate is firmly held, the other end being pierced with a hole of larger diameter than the rivet so that the fabric may be stretched.

25,837. Sutton, J., and Sutton, G. J. Nov. 15.

Fastening the hinged hames of horse collars. The ends to be connected are recessed, and in one of them b there are mounted two spring catches c^2, c^3 which are adapted to enter the recess in the other part b^1 and engage with shoulders f^2, f^3 therein. When thus engaged, the bolt h springs out between the catches as shown to prevent accidental unfastening. To unfasten, the bolt h is slid back by means of a sliding plate on the cover-plate, and the catches are then disengaged by means of the finger-pieces e, e^1 .



26,206. Fischer, O. Nov. 19.

Saddles; pads for.—The pad b for a saddle is made thicker at the points of greatest pressure as at c, c^1 and d, d^1 .

(For Figures see next page.)

26,206.

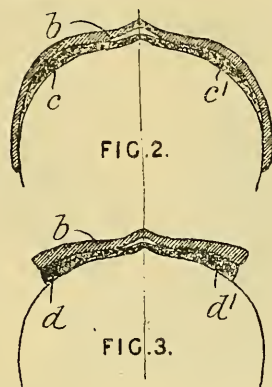
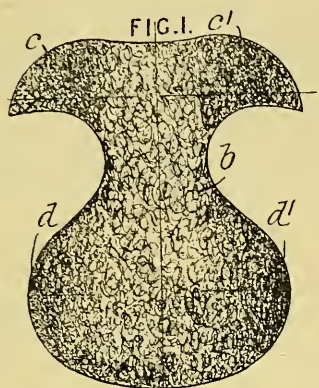


FIG. 2.

FIG. 3.

26,753. Choles, F. J. Nov. 24.

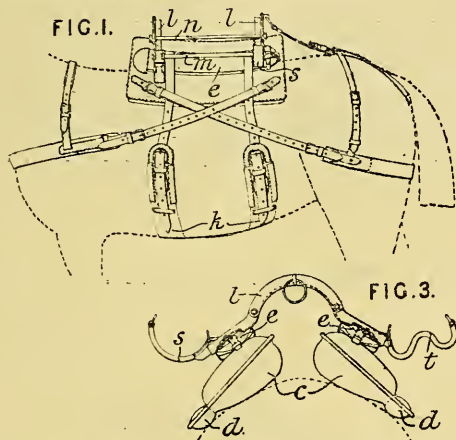


FIG. 3.

Saddles; pads for.—The pack-saddle is provided with pads which rest on the back of the animal and do not overhang the sides. The pads are spaced apart and are formed with a large part *c* and a smaller part *d*, so that the weight is mainly carried by the parts *c*. The upper surface of the pad is formed with a flap which can be opened to insert or remove the stuffing-materials. The arches *l* are spaced apart by rods *m*, *n* and are secured to side bars *e*, which are removably attached to the pads. The load is carried by suitably-shaped bearers *s*, *t*, which are pivoted to the arches so that they can be folded over the saddle when not in use. The saddle is secured in position by straps, as shown in Fig. 1, and the girths *k* are connected by a cross-band.

27,376. Wulf, P. Dec. 1.

Fastening.—A trace or the like is fastened by means of a bolt *d* engaging a sleeve *a*, in which it is held by a spring-pressed lever *i*, pivoted at *j* between flanges *k* of the sleeve and having a projection *g* interlocking with the notch *f* situated vertically below the pivot *j*. As a safeguard against accidental depression of the finger-piece *i*², the base *m*

of a turn-button *l*, working through an arm of the lever *i*, engages slots *p* in the flanges *k*, being

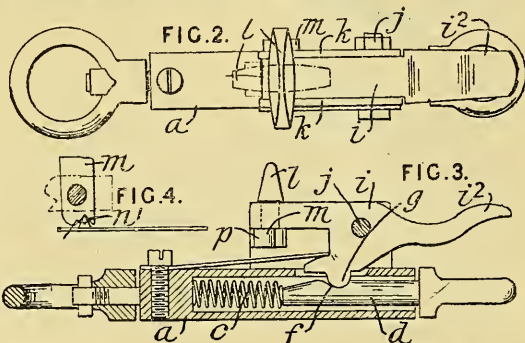


FIG. 2.

FIG. 4.

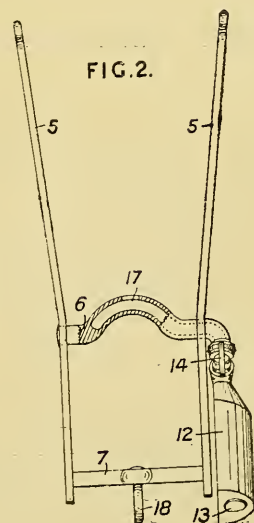
FIG. 3.

retained therein by the spring-pressed pin *n*¹, Fig. 4. A spring *c* presses the end of the bolt *d*, serving to eject it when released, thus facilitating the release of the trace of a fallen horse.

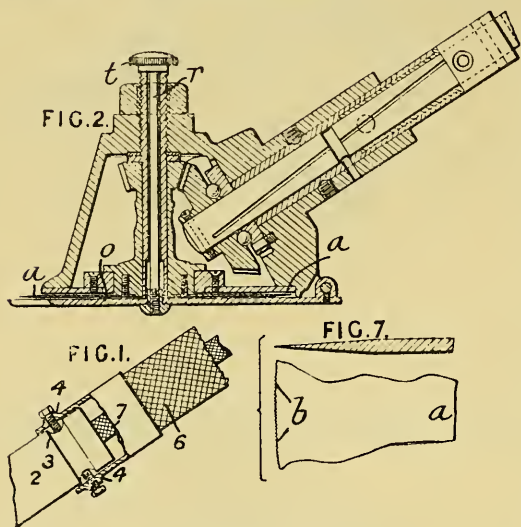
27,456. Lewis, W. T. Dec. 3.

Bridles.—A bridle for attaching to the horse's head the drenching-bit shown comprises a headstall with short side straps to which are fastened the upper ends of the long metal cheek pieces 5 of the bit. The horse's head is raised by a rope attached to an eye 18 fixed on a cross-bar at the lower end of the cheek pieces of the bit.

FIG. 2.

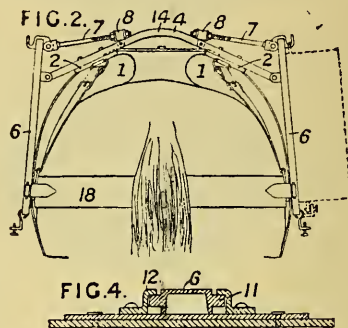


27,814. **Johnson, S. L., and Calvert, W. E.** Dec. 6.



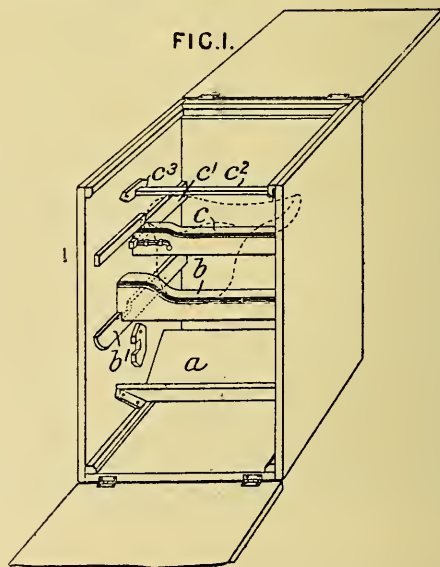
Horse-clippers and the like.—The hair or wool is cut without a scissor-like or shearing action by a rotary disk *a*, the edge of which is formed with a number of very small teeth *b*, Fig. 7. A guard comb *o* is adjustably mounted beneath the disk by being hinged to the back of the casing and fixed by a bolt *r* and screw *t*. The disk is actuated by any suitable hand, mechanical, or electric mechanism. When a flexible shaft *7*, Fig. 1, is employed, the non-rotatable covering *6* is connected to the handle *2* by screws *4* which engage a groove *3* in the handle, so that, if the cutter is clogged, the whole apparatus can rotate and thus avoid straining the shaft. In a modification, two rotary disks are employed.

to the side bars *2* which are riveted to the bows *4*. The lower ends of the bars *6* are connected by a bar *6'* which bears on the pad *1*, and the upper ends are connected to adjusting rods *7* which pass through a



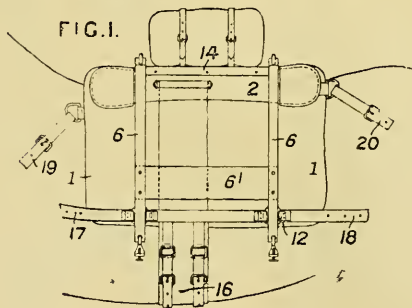
pivoted sleeve *8* and are secured in any position by nuts. A metal plate *14* is fixed along the top of the saddle for carrying goods. The straps *17, 18* for securing the saddle in position are provided with clips *12*, Fig. 4, which engage with lugs *11* formed on the lower ends of the bars *6*. The saddle is further secured by straps *19, 20*, and a girth *16*.

28,117. **Walsh, J. R.** Dec. 10.

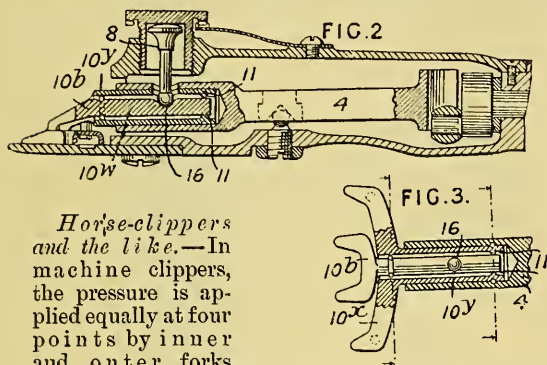


Stands.—A box for saddles, harness, &c. has a V-shaped support *a* on which the cantle and pommel of the lowest saddle rest, and has trees *b, c* for other saddles. Bars *c'* held by pivoted brackets *c''* secure the top and bottom saddles, and the trees are supported by guides *b', c'*. The trees may be arranged side by side.

27,951. **Schaller, K. F.** Dec. 7.



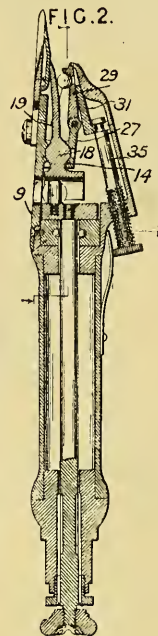
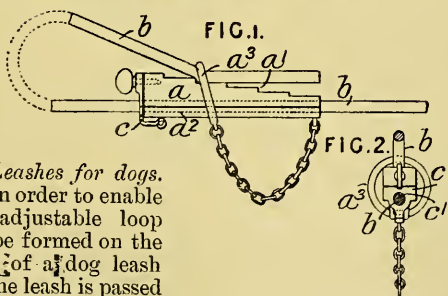
Saddles; breeching.—In a packsaddle, the side bars *6* to which the load is secured are pivoted to the ends of the bows *4*, so that their inclination may be adjusted and the saddle made to fit different animals. The wedge-shaped pads *1* are connected

28,267. Stewart, J. K. Dec. 11.

Horse-clippers and the like.—In machine clippers, the pressure is applied equally at four points by inner and outer forks 10^a, 10^w pivoted on a longitudinal axis. The outer fork has a hollow stem 10^w which is mounted in a boring at the end of the actuating-lever 4, and the stem 10^w of the inner fork is mounted in this hollow stem 10^w in such a way that, besides a rotary movement, the inner fork is capable of a slight vertical movement about a point 11 at the rear. The pressure is applied by a dolly 8 to the inner stem 10^w and is thence transmitted to the outer stem. The point 16 at which the pressure is applied is so placed that the pressure applied by each fork is equal.

28,879. Grace, T. Dec. 18.

Horse-clippers and the like.—In machine clippers, the pressure is applied by a wedge 31 actuated by a screw 35 passing backwards from the casing. The wedge acts on a hinged flap 29 having a ball bearing on the operating-lever 19. The parts are rendered easily accessible by making the base-plate 9 removable. The vibrating lever 19 has a spherical bulb 18 held to the base 9 by a bridge-piece 14 which also has a projection 27 carrying the tension flap 29.

**A.D. 1907.****108. Kneeshaw, W. S.** Jan. 2.

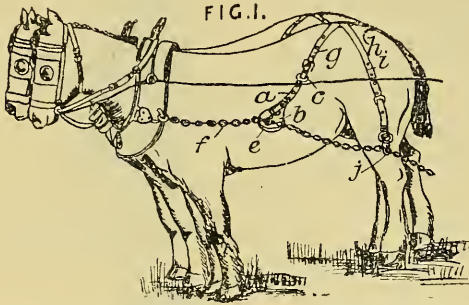
Leashes for dogs.—In order to enable an adjustable loop to be formed on the end of a dog leash b, the leash is passed through a tubular opening a² in a wedge-shaped block a, which is

secured to the leash in any position by a hinged plate c having a hole c¹ for the leash so arranged that, when the plate c is screwed to the block a, the leash is gripped frictionally between the edges of the holes a² and c¹. The end of the leash is then passed through the ring in the dog's collar, and is secured against the stepped face a¹ of the wedge by a ring a³.

1215. Owen, W. Jan. 17.

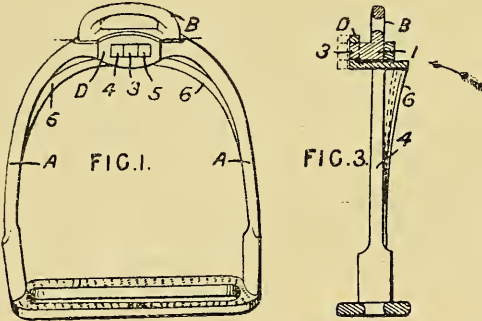
Back and belly bands.—A crupper, backband, and trace-chain carrier for each side of a horse, used in ploughing &c., comprises a leather strap a, which has at its lower end an enlarged, flattened, and

preferably padded part *b*, and is attached above to the backband strap *g*, which is connected to the crupper *h* and loin straps *i*. The strap *a* is provided with a swivel hook or loop *c* through which the rein



passes, and with a movable hook or loop *e* at the lower end to carry the trace chain *f*. The trace chains also pass through loops *j* at the ends of the loin straps *i*. Thus the reins are adjusted according to the position of the trace chain.

1756. Gloster, J. Jan. 23.

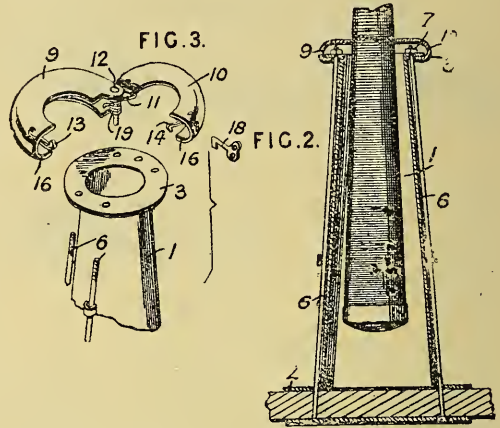


Stirrups.—In a safety stirrup, the stirrup loop *B* is detachable from the stirrup iron *A*, which is hung on a laterally projecting foot *3* of the loop by means of an eye-piece *D*, which is held in position by a bow-shaped or other spring *6* at the front of the stirrup. If the rider is thrown, his boot presses upon the spring *6* and forces back the eye-piece *D*, so that the stirrup falls from the loop *B*.

3417. Conrad, P. I. Feb. 11.

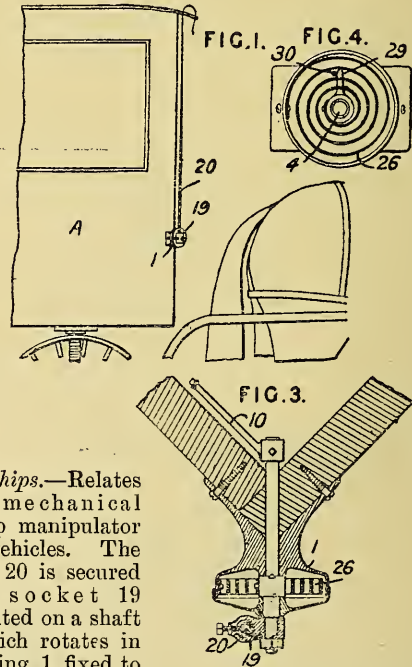
Whip-sockets.—The whip-socket *1* is formed with flanges *2*, *3* at the bottom and top, and is secured to the vehicle by bolts *6* passing through the flanges *2*, *3*. The whip is secured in the socket by arms *9*, *10* pivoted at *12* to the flange *3* and provided with spring catches *13*, *14*, which engage with each other when the arms are brought together. A flange *16* on the arms embraces the lower side of the flange *3*, and, when the whip is locked in the socket, the nuts *7* of the bolts *6* are covered by the arms,

so that the socket cannot be removed from the vehicle. The arms are released by a key *18* which



lifts the catch *14*, and the arms are moved apart by a spring *19*.

3460. Weeks, A. L. March 9, 1906, [date applied for under Patents Act, 1901].

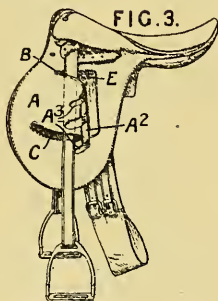


Whips.—Relates to a mechanical whip manipulator for vehicles. The whip *20* is secured in a socket *19* mounted on a shaft *4*, which rotates in a casing *1* fixed to the corner of the vehicle *A* so that, when the shaft *4* is rotated from the inside of the vehicle by means attached to a lever arm *10*, the whip is brought to bear diagonally across the horse. A spiral spring *26*, fixed at one end to the shaft *4* and at the other end to the

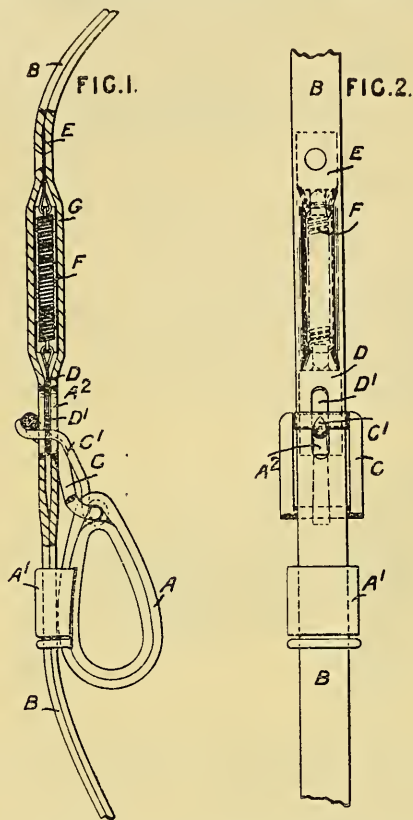
casing 1, serves to bring back the whip into a vertical position, and an arm 29, Fig. 4, on the shaft 4 bearing against a stop 30 limits the return movement of the whip.

3476. Fachiri, A. P. Feb. 12.

Saddles.—The stirrup leathers are carried partly under the side flaps of a saddle so as to present a smooth surface for the leg and knee of the rider. Two slits are cut in the side flap so that the stirrup leather may be threaded through one slit, passing underneath the flap and emerging through the other slit on to the main flap of the saddle. The soft padding under the flap is protected by a piece of soft leather which may be secured along its fore edge only, being retained in place at the rear edge by tongues or straps passing through loops formed in the padding. In a modification, shown in Fig. 3, a third slit connects the rear ends of the slits B, C, so forming an auxiliary flap A². The rear edge is kept in place by tongues A³ sewn on the undersurface so that they can be passed under the adjacent edge of the main flap A, thus enabling the stirrup to be readily disengaged in case of an accident. The padding at E, besides being protected from wear by means of a piece of short leather, may be further modified or thinned slightly to allow the stirrup leather to bed itself in the padding, so that as slight a ridge as possible results from the position of the stirrup leather beneath the flap.



which serves the same purpose as the buckle tongue C'. The two parts of the trace are held together



by loops which do not limit the movement of one part relatively to the other.

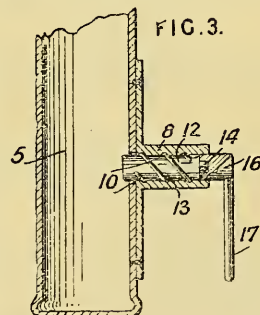
3666. Govier, H. Feb. 14.

Backbands; traces.—A spring or yielding connexion is introduced between each of the shaft tugs and the backband and a similar device in each of the draught traces. Figs. 1 and 2 show how this is effected in the former case. The shaft tugs A are connected to the backband B by a loop A¹ and buckle C, but the tongue C¹ of the buckle passes through a longitudinal slot A² in the backband B and through an opening D¹ in a sliding metal plate D between the two pieces of leather forming the backband. The plate D is connected to a spring F in a protective cylindrical casing G, the other end of D being attached to a fixed plate E. The whole is arranged so that, normally, the buckle tongue C¹ is drawn up to and held in about the middle of the slot A², and the tug A is thus connected to the band B through the intermediary of the spring F. When a pull is experienced, the spring F is stretched until the tongue C¹ reaches the end of the slot A²; the pressure is then taken by the backband B directly. As applied in traces, the loose or detachable fore end of the trace, which is connected to the hames, is provided with a stud

4005. Runyon, E. E. Feb. 18.

Whip - sockets.—

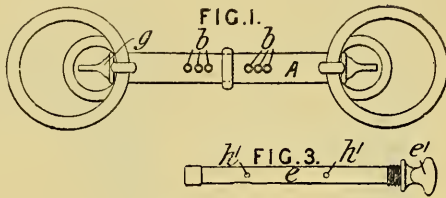
The whip is secured in the socket 5 by a bolt 12 formed with a thread 13 of large pitch, engaging with a corresponding groove 10 in a sleeve 8 secured to the socket. The bolt is turned by a key 17 having a bead 16, adapted to fit into the sleeve 8 and to engage with the squared end 14 of the bolt.



4027. Bakewell, F. G. Feb. 18.

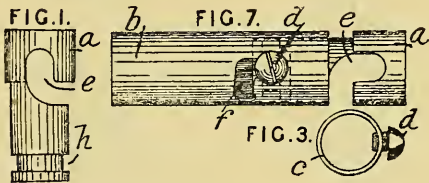
Bits.—The mouthpiece A of a training-bit is

made hollow to accommodate a tube *e* of liquid, which flows through holes *h*¹ in the tube and holes *b* in the mouthpiece and promotes the flow of saliva, thereby keeping the horse's mouth moist.



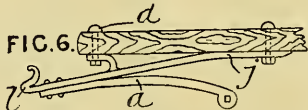
One end of the mouthpiece is stopped by a screw cap *g*, and the other by a cap *e*¹ on the end of the tube *e*. The flow of liquid from the tube is regulated by adjusting the position of the holes *h*¹, *b* relatively to one another.

4351. Bell, A. F. Feb. 21.



Leaders for dogs.—Dog collars are attached to umbrellas, walking-sticks, &c. by a special ferrule which may be fastened to the collar ring. The ferrule consists of a plug *a* with a diagonal or hook-shaped recess *e*, sliding in the ferrule casing *b* and held therein by a snap, or by a stud *d* on a ring *c*. The stud extends into a groove *h* on the plug *a*, and works in an L or T shaped opening *f* in the casing *b*. The plug *a* is pulled out, as shown in Fig. 7, to insert the collar ring in the recess *e*, and when pushed back is held in place by the stud *d*, which allows the plug to revolve.

4412. McGinn, P. J. Feb. 22.

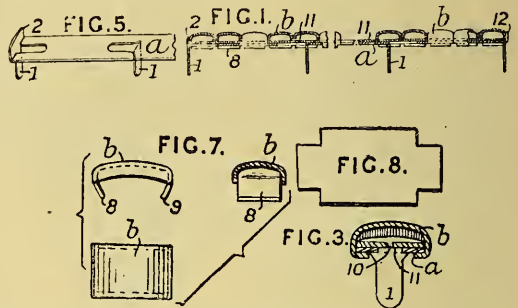


Fastening.—One of the scroll irons *j* of the bearing-spring of a vehicle is formed with a draught-hook *l*.

4573. Poppleton, T. Feb. 25.

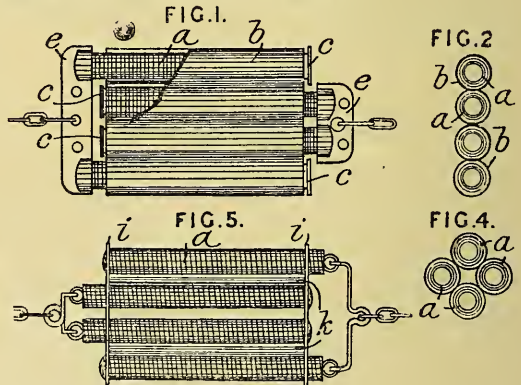
Bridles.—Relates to the manufacture and attachment of bridle fronts, in which a strip *a* of metal,

shown in Fig. 5, has punched out of it pieces such as 1. Threaded on to the strip *a* are a number of metal mounts *b*, Fig. 1, filling up the strip from end to end and prevented from slipping off by a



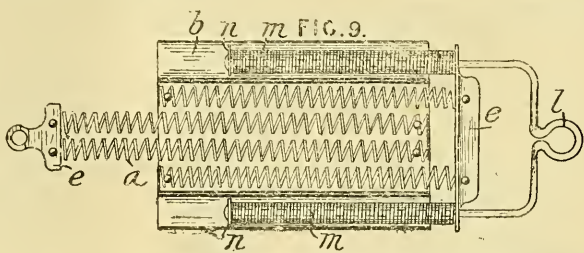
turned-up end 2. Each mount is raised from a sheet-metal blank, as shown in Fig. 8, and formed to the shape shown in three views in Fig. 7, being slightly curved, and having flanges 8, 9 to enable them to be threaded on to the strip *a*. A flat strip or two strips of metal 10, 11, shown in end elevation in Fig. 3, are inserted between the mounts *b* and the strip *a* to strengthen the strip. The end 12 is then turned up and the ends 8, 9 of the mounts are closed down under the edges of the strip. The front may now be fixed to the leather part by means of the pieces 1, which pass through holes in the leather and are clenched down on the back of same.

5208. Torley, H. March 4.



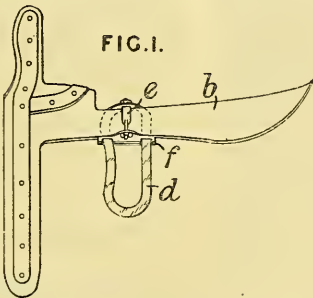
Traces; fastening; tethering animals.—Relates to extensible spring devices applicable as draught devices for horses &c., and constructed of a number of helical wire or cylindrical rubber springs grouped side by side and arranged so that the extension produced when the whole device is subjected to a pull will be two, three, or four times as much as that which would be obtained by subjecting one of the springs separately to the same pull. An arrangement for giving a double extension is shown in Figs. 1 and 2, in which four springs *a* are

enclosed within an open-ended casing *b* and fitted with disks *c*, the disks upon the outer pair being arranged to bear against one end of the casing *b*, while those upon the inner pair bear against the opposite end, the other ends of these pairs being connected by cross-pieces *e* as shown. The inner springs may be replaced by a single one of double strength, and the disks *c* may be soldered to the ends of the casing *b*, or they may be dispensed with, the end of the springs being secured to the casing. The four springs *a* may be grouped as shown in Fig. 4, in which case the cross-pieces are arranged at right-angles to each other. Such an arrangement may be fixed at one end to a wall and provided with an eye at the other end for attaching an animal or an article, in which case the covering *b* may be of india-rubber or be replaced by helical wire springs which are not arranged to be extended, thereby rendering the device flexible



vertically. In a modification, the cross-piece *e* may be replaced by enl plates *i*, Fig. 5, connected by stays *k*. In a device which is arranged to give a triple extension, an additional pair of springs *m*, Fig. 9, is provided and arranged to be compressed by disks *n* fitted at the end of a forked rod *l* which passes through one of the cross-pieces *e*. For a quadruple extension device, a similar pair of compressive springs is arranged in connexion with the other cross-piece.

5359. Richards, J. W. March 5.

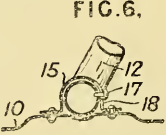
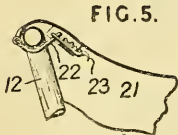
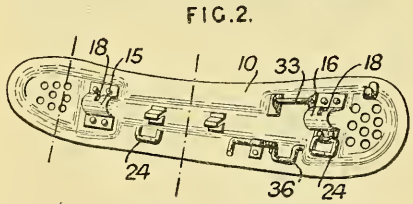
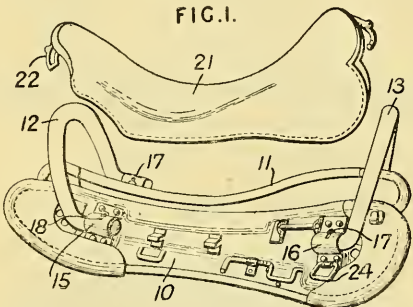


Saddles.—In a side saddle, the side bar *b* is provided with an additional support *d* which can be attached to the bar. The support *d*, consisting of a metal band curved to fit the horse, passes behind, and is bent over the top of the bar *b*. The band passes through a flanged plate *f*, and is secured in any position by a bolt *e* connecting the top of the band to the plate *f*.

5675. Antosiewicz, J. March 8.

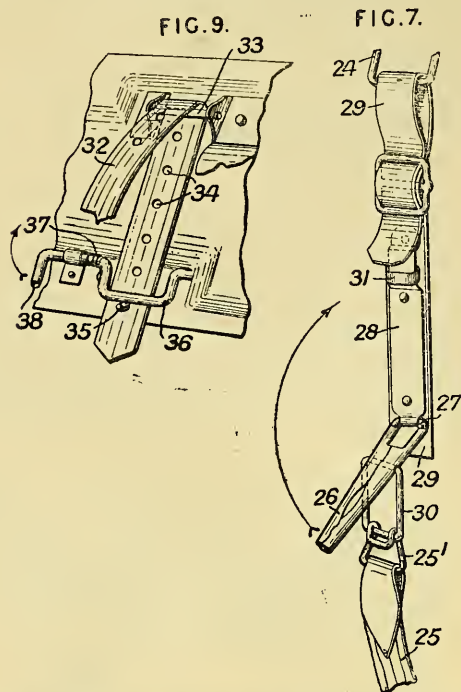
Saddles; fastening.—Relates to that class of saddle-tree which comprises two resilient metal side bars, as 10, 11, flexibly connected together by bows 12, 13 and wherein the seat 21 is suspended between the bows. The bent ends of the bows fit into eyes 15, 16, and are held in position by screws 17, Fig. 6, passing through slots 18. Within the limits of the slots, the bars 10, 11 may move relatively to the bow ends 12, 13. The seat 21 is stamped out of sheet steel and is leather covered; it is connected to the bows by rotatable clips 22 secured to the seat, which are pressed round the bows and secured by fasteners 23, Fig. 5, on the under surface of the seat. Loops 24 are provided for

suspending the girth 25, Fig. 7, which is tightened by means of a lever 26 mounted on a plate 28 fixed to a strap 29. A loop 30 is rotatably mounted near the axis of rotation 27 of the lever, and to



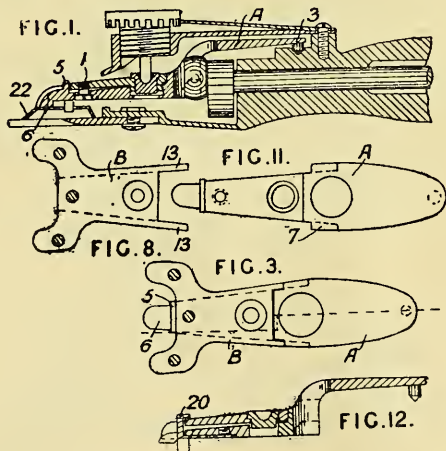
this the girth 25 is attached by a hook 25'. To tighten the girth, the lever 26 is rotated in the direction of the arrow, and is held by a sliding loop 31. Each stirrup leather 32, Fig. 9, is passed round a pin 33, and the free end is provided with holes one of which is caused to engage with a pin 35 on the saddle tree. It is held on the pin by a

spring clip 36. To adjust the stirrup leather 32, the cross-bar 36 is raised in the direction of the



arrow against the action of a spring 37 by means of a handle 38.

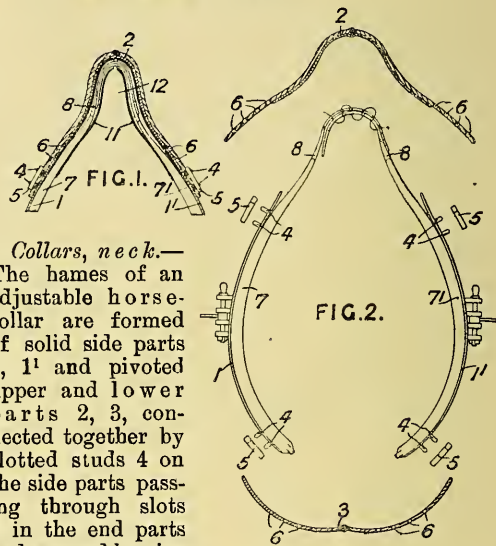
5735. Silver, W. March 9.



Horse clippers and the like.—In machine clippers having three pressure fingers acting on the cutter 22, the middle finger 6 is formed on the vibrating lever A, which is fulcrumed at the rear end 3, and the outer ones are formed on a fork B pivoted on the inner bar by means of the projecting ears 13,

Fig. 8, which engage grooves 7, Fig. 11, at the side of the bar A. The two parts are loosely secured near the end by a screw 1 or by a projecting piece 20, Fig. 12, formed on the bar A. The pressure is applied to the fork B, and thereby transmitted to the bar A. A projecting guard-piece 5 on the bar closes the aperture between the two parts. In the form shown, the bar A passes beneath the fork B, but, in a modification, it passes above and is provided with a hole for the pressure rocker.

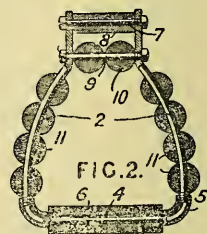
5876. Klima, E. March 11.



Collars, neck.—The hames of an adjustable horse-collar are formed of solid side parts 1, 1' and pivoted upper and lower parts 2, 3, connected together by slotted studs 4 on the side parts passing through slots 6 in the end parts and secured by pins 5. The body parts 7, 7' of the collar end in flaps 8 which are laced together, a covering 11 being folded round the flaps. The part 2 is shaped so that, when in position, a recess 12 is formed in the collar to prevent the top of the horse's neck from coming into contact with the collar.

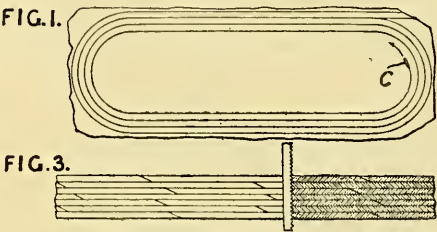
5938. Breitenstein, F. W. March 12.

Stirrups.—The side pieces 2 of a stirrup are connected by parts 5 to the bar 4 supporting the tread 6, and are connected together at the top by a bolt 7 carrying a spacing-member 8, and by a bolt 9. The tread 6 is rotatably mounted on the bar 4, and balls 11, 10 of india-rubber &c. are placed on the side pieces 2 and on the bolt 9, so that the foot of the rider will easily slip out of the stirrup in the event of his being thrown.



6519. Usina, E. A. March 18.

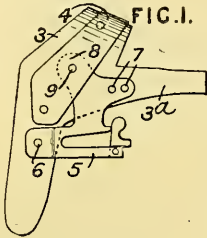
Straps and bands.—Relates to a method of making harness straps &c. Sheets of leather, formed from strips having overlapping ends cemented together, are cemented or otherwise united to one another to form a pile, as shown in plan in Fig. 1, and in elevation and section in Fig. 3. A cutting-tool then passes through the pile, forming belts made up of pieces fastened together with their cut edges forming the faces of the belt or strap. The ends may be joined either by tapering or by a mortise and-tenon arrangement, and then cementing or using metallic fastenings. Or the tool may be caused to trace out a closed curve so as to produce a jointless belt.



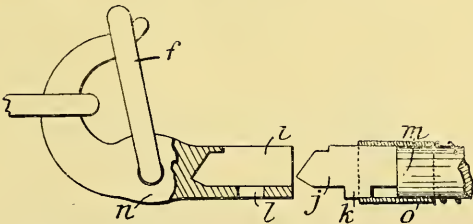
Preferably, only the fleshy part of the hide is used. Several cutters may be employed.

6772. Butler, E. R. March 21.

Saddles.—The stirrup bar 5 is riveted at 6 to the head 3 of the saddle-tree, and at 9 to the strengthening-plate 4, and may be riveted at 7 to the bar 3^a of the saddle-tree. The shape and position of the rivet plate 8 may be modified to suit the shape of the saddle.



6923. Hine, C. March 22.

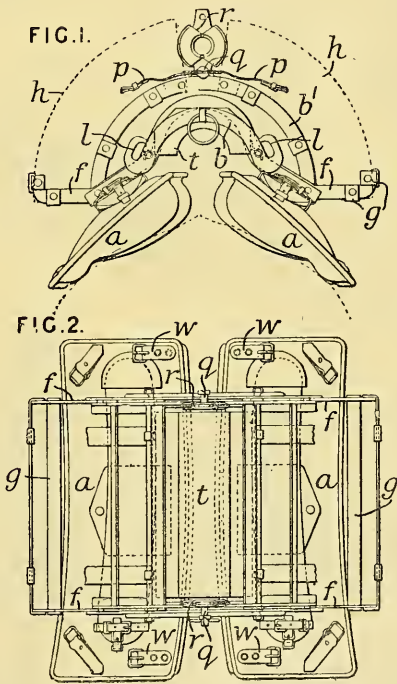


Fastening.—Relates to a release coupling for use in combination with a hook having a lock-ring *f* suitable for harness &c. The body *n* of the hook is slotted as at *i* to fit the flat plate *j* of the other member. A spring-pressed collar *o* keeps the two parts in alinement while a projection *k* in a recess *l* takes the pull. If desired, the projection *k* may be extended for the insertion therein of a holding-pin, screw, &c.

8343. Choles, F. J. April 10.

Saddles; small-arms, attaching.—In an arrangement for carrying two guns, ammunition, a spare

barrel, and tools on a pack saddle of the form described in Specification No. 26,753, A.D. 1906, the saddle-tree *b*, Fig. 1, to which the pads *a* are connected, is provided with a crate frame *b'* fitted with two



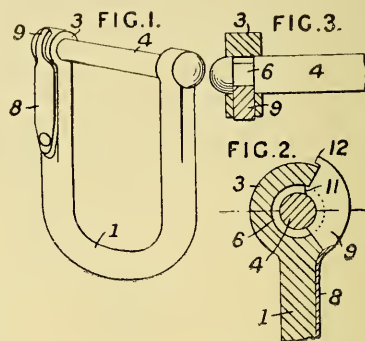
crates comprising metal frames or brackets formed by the angular end bars *f* and the longitudinal bars *g*. On these brackets rest the ammunition cases *h*, which are circular or of quadrant form in end view, and are fitted with handles. They are kept in place by straps fastened to dees *l* at the front and rear of the saddle-tree. The guns, in cases, are attached to the bars of the crates, and the cases are also provided with permanent stay straps connected with buckle pieces *p* fixed to

studs *g*, on the upper part *b'*, and fastened to straps *w* on the upper part of the saddle panels. A box *t* for the tools and component parts of the guns is fixed under the tree arch of the saddle. The spare

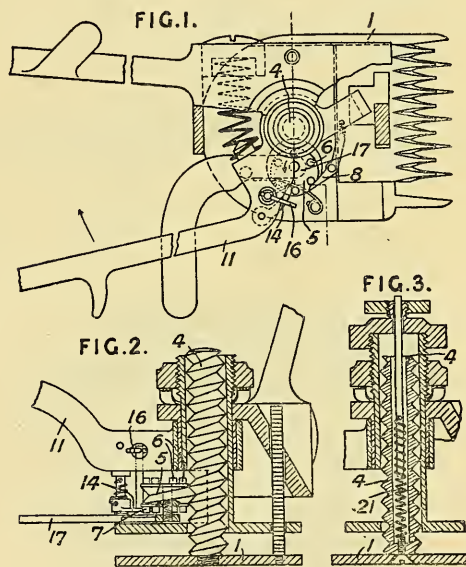
barrel case is held in bearing plates or eyes *r*, mounted upon the upper part of the saddle tree, by means of straps attached to the case and to the plates.

8437. Burrow, W. E. April 11, 1906,
[date applied for under Patents Act, 1901].

Fastening, shackles for. A clevis for use with agricultural implements comprises a part 1 and a pin 4, which is formed with a groove 6 adapted to be engaged by the head 9 of a spring arm 8 secured to the clevis, for locking the pin to the part 1 while allowing the pin to rotate in its bearings. The head 9 projects through a slot in the end 3 of the part 1 and is provided with a lip 11, which engages with the lower edge of the slot so that it requires a smart pull on the projection 12 to disengage the lip 11 and to release the pin 4.

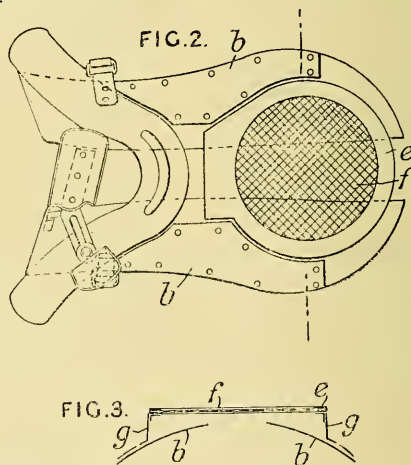


8497. Schneider, G. April 12.



Horse clippers and the like.—To increase automatically the length of the cut in hand-operated clippers, an adjustment comb 1 is carried by a worm 4 which engages a screw-wheel 5 having studs 6, 7 to engage with pawls 8, 14 on the operating-handle 11. The screw-wheel 5 is carried by a cranked lever 17 so that it can be moved out of engagement with the worm to enable the plate 1 to be restored to its original position either by hand or by the action of a spring 21, Fig. 3. When it is desired to maintain an equal cut, the pawl 14 is turned out of engagement with the studs 7 by means of an arm 16.

8906. Mills, C. K., [Guilleaume, R.].
April 17.

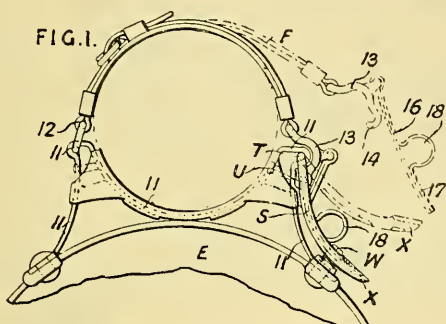


Saddles.—A comfortable seat is provided on saddles having sheet-metal saddle-trees by making the seat *f* flat. The seat is preferably round, and its frame *e* is riveted to sheet-metal supports *g* which are riveted to the side bars *b*. The sheet-metal frame *e* has interwoven strips or wires attached to it to form the seat.

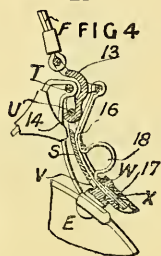
9069. Bremberg, A. April 19.

Fastening; saddles; small-arms, attaching.—Relates to a quick-release and tightening device for harness straps &c., more especially for use in connexion with pack saddles for mountain guns. In Fig. 1, a cradle 11 for the gun is shown attached to the saddle E. An adjustable strap F is attached permanently at 12 to the cradle, and at the other

end has fixed to it a hooked part 13. A rigid hasp-like part S is hinged to the cradle 11 by the cross-bar T. The hasp S also has another cross-bar U with which the hook 14 is adapted to engage.



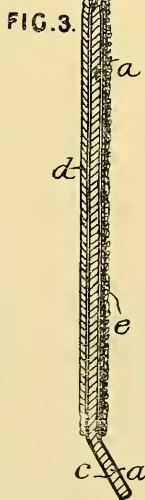
A staple W, fixed to the saddle, passes through an aperture V in the hasp S, when it is in its closed position. To lock the strap, the hasp S is raised, the hook 14 is engaged with the cross-bar U, and the hasp S is brought down over the staple W. The parts T, U are so placed that toggle-action takes place when the hasp is pressed down, and the parts move slightly beyond the dead-centre so that the hasp is locked. To the hooked part 13 is fixed a strap 16 with handle 18 and metal stiffening-plate 17. This strap is passed through the staple W, after it has entered through the aperture V, and thence into the pocket part X at the end of the hasp, to prevent any accidental unlocking.



9197. Frost, T. April 20.

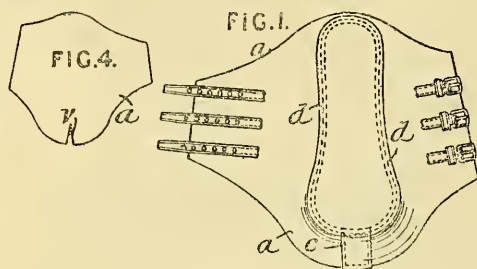
Horse - boots. —

The ankle-boot is formed with a base-piece *a* of kersey or like material, having a stiffening-patch *d* on the outside and a similar pad *e* of lamb-skin, with the wool side placed inwards, on the inside. The lower part of the piece *a* is formed with a V-shaped notch *v*, Fig. 4, and the two edges of the notch are drawn together and covered by a strip *c* to form a flap to protect the fetlock.

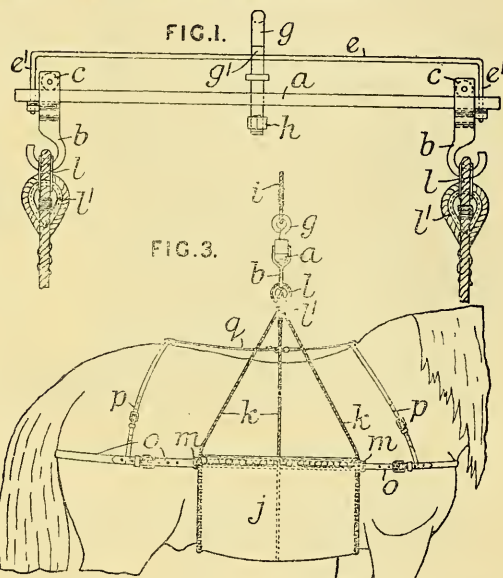


(For Figs. 1 & 4 see next column)

9197.



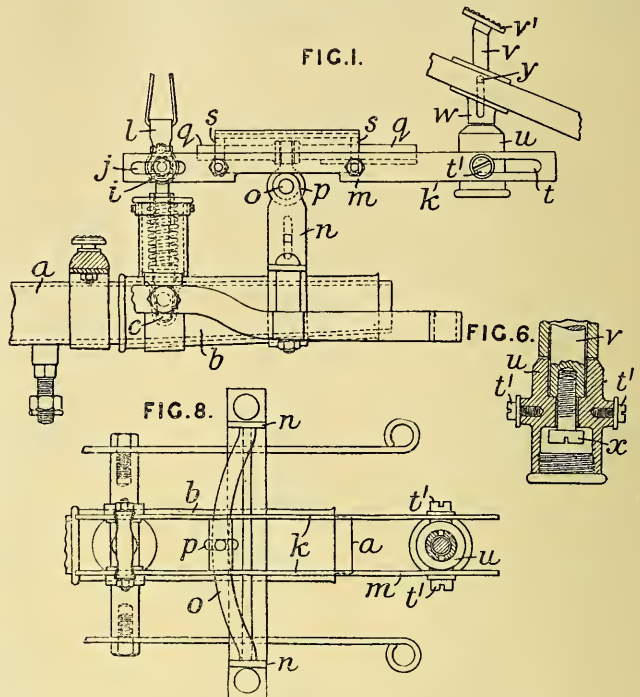
9602. Mobley, W. A. April 25.



Slings, lifting and like.—In a sling for horses and cattle, in which the supporting-hook has attached to it a bar along which slide hooks provided with rollers, these hooks carry the sling. The hooks *b* are provided with rollers *c* and are mounted upon the bar *a*. The bar *e* is bent at the extremities so as to form guards for the roller hooks *b*, but this may be effected by bending the bar *a* at its ends. The shank *g* of the supporting-hook *g* passes through the bars *e*, *a*, and is secured at the lower end by the nut *h*. A rope or chain *i* is connected to the hook *g* and to a pulley-block attached to the ceiling. The sling *j* is supported at its side by three ropes *k* connected to the hooks *b* by eyes *l*, *l*. The U-shaped pieces *m* connected to the sling afford attachment for straps *o* which pass longitudinally around the animal's body. The straps *p* pass over the animal's back and are held in position by the strap *q*. It will be seen that the sling as a whole adjusts itself to the width of the horse with which it is used. In a modified construction, one of the hooks only is movable, the other being fixed, while the support *g* in this case will be movable on the bar *a*.

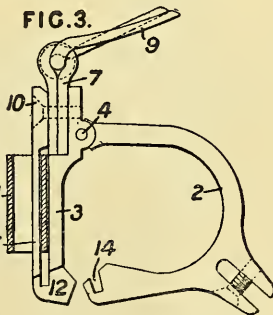
10,138. Hirsch, M., and Greil, C. May 1.

Runaway horses, releasing.—In a device for releasing the pole of the vehicle from its socket, comprising a spring bolt actuated by a treadle connected to the bolt by a pivoted lever, means are provided by which the lever can follow the motions of the pole. The spring bolt connecting the pole *a* to the socket *b* has a cross-head *i* which projects through slots *j* in the side frames *k* of the lever *m* and may be connected to a device *l* for raising the bolt. The frames *k* are connected at the other end by means of slots *t* and pins *t'* to a member *u*, Fig. 6, which is able to turn about a pivot bolt *x* on the treadle rod *v*. The treadle *v'* is placed on the boot or in any suitable place, and the rod *v* of the treadle is guided through the bracket *w* by pins *y* which prevent the rod from turning. The lever *m* is slidably connected to the pole socket *b* by means of a rod *q* sliding in guides *s* on the frames *k* and connected by a ring *p* to a bolt *o* supported on uprights *n* from the socket *b*. The bolt *o* slides through the ring *p* when the pole moves about its pivot. In a modified form, the bolt *o*, Fig. 8, spaced between uprights *n*, is in the form of a portion of a circle, the centre of which coincides with the axis about which the pole *a* rotates. The ring *p* in this case is connected directly to the lever *m*.

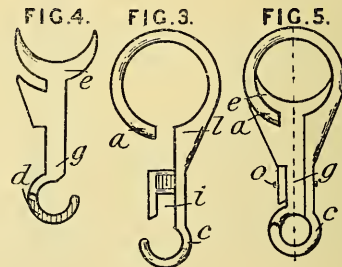
**10,632. Kronke, R. P. Sept. 8, 1906,**
[date applied for under Patents Act, 1901].

Tugs, shaft.—

The shaft tug is in two parts 2, 3 pivoted together at 4 and secured by the loop 11, into which is placed the end of the harness strap attached to the buckle 9. The part 3 is formed with a groove for the loop and with a projection 12 which enters a notch in the end of the part 2. The loop 11, when the tug is closed, enters recesses 14 in the member 2 and secures the parts together. The buckle 9 is attached to the tug by a strap 7 the ends of which are secured in a recess in the member 3 by a screw 10.



consists of the two parts shown in Figs. 3 and 4, pivoted on a pin *o*, as shown in Fig. 5. The loops of the hook are of any suitable shape. The lower end of the hook may be solid and undivided. A



swivel eye may be substituted for the loops *c, d*. The upper loop may be arranged in a plane at right-angles to the lower loops. A number of similar hooks may be secured to a plate. The closing-lips *e* may be extended on either or both sides, or one lip may be carried round the loop of the hook. A flat surface with a central projection may be formed on the part *a* to hold down the closing-part. The closing-part may take the form of a ball or encased roller which locks itself in a suitable

10,668. Tibbitts, J. May 8.

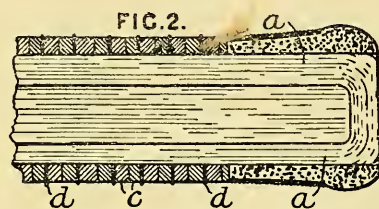
Fastening.—A hook or shackle for harness &c.

bearing in the parts *a*, *l*. The neck *g* and jaws *i* may be tapered. The openings for access to the

hook may be placed at any position in either side of the centre of the hook.

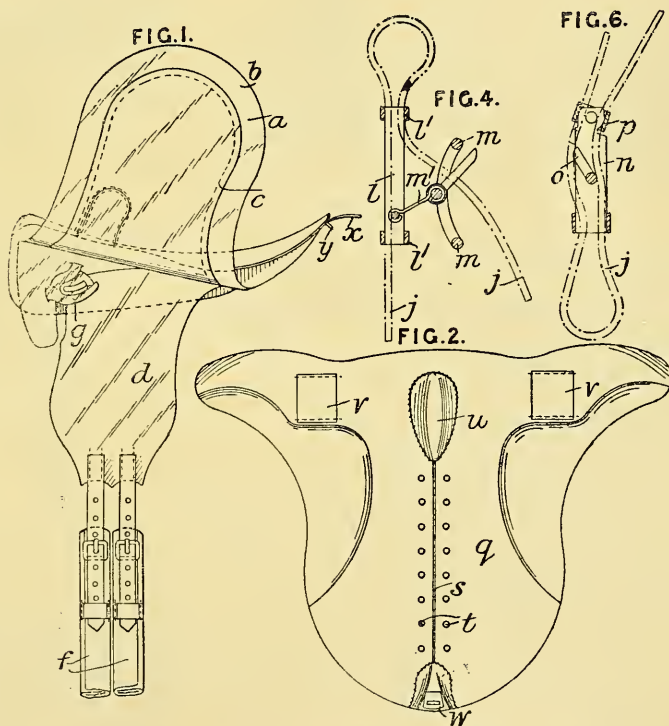
10,680. Trimmings, A. E. May 8.

Whips, handles for. Fig. 2 shows the invention applied to the handle of a cricket bat. The front and back exterior sections *a* of the handle are formed in one continuous length, and disks *c* of leather or hide are forced on and cemented together. India-rubber, gutta-percha, or the like in thin annuli *d* may be interposed between some or all of the rings *c* in conjunction with textile fabric saturated with adhesive matter. The rings *d* project slightly to give a better gripping-surface.



10,876. Richards, J. W. May 9.

Saddles; fastening stirrup straps, buckle attachments for. The saddle is constructed so that the total thickness of the layers of material between the legs of the rider and the horse is reduced. The centre part *a*, Fig. 1, of the saddle flap *b* is cut away, and is replaced by a lining of waterproof material and covered with thin leather *c*. The sweat flap *d* is fixed to the tree at its upper end, and is extended at its lower end to carry the girth straps *f* without increasing the thickness of the saddle. The girth is in two parts *f* of folded leather, with an insertion of woollen material between the folds. The stirrup leather *j*, Fig. 4, is formed of a single strap which is passed over the saddle-bar *g* and secured by a buckle *m* mounted on a link *m'* on an outer frame *l*, which is provided with guides *l'* for the stirrup leather. The buckle can be raised out of the frame to facilitate fastening. The stirrup leather is secured at its lower end to the stirrup by a buckle *n*, Fig. 6, having a fixed tongue *o* and a pivoted guide-loop *p* to enable the strap to be easily unfastened. The numnah *q*, Fig. 2, is made of felt and hollowed out at parts to reduce the thickness. A cut *s* is made down the middle of the numnah with ventilating-



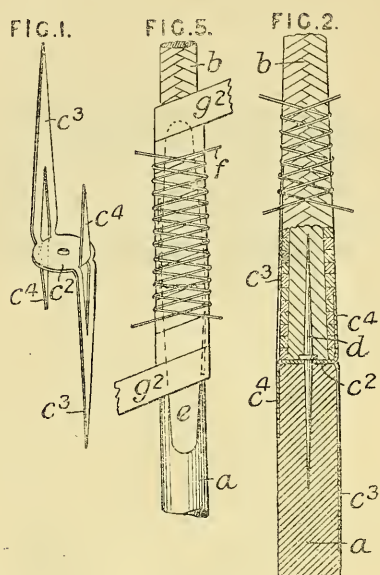
holes *t* on each side, and the numnah is formed with pockets *v* for the points of the tree. The rear of the numnah is attached to the saddle by a loop *w* which engages the strap *x*, Fig. 1, and loop *y* on the saddle.

12,852. Audley, F. H. June 3.

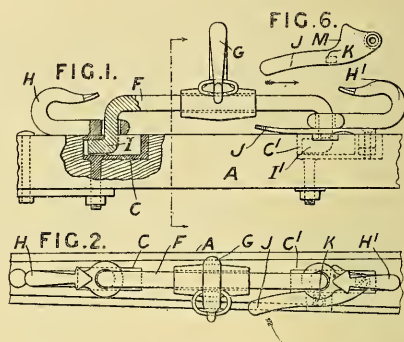
Whips.—The thong *b* of a whip is connected to the handle *a* by a circular plate *c*², Fig. 1, provided

at its opposite side edges with parts *c*³, *c*⁴ which overlap the adjacent ends of the thong and handle. A double-ended pin or screw *d* passes through a slot in the plate *c*², and strengthening-strips *e*,

Fig. 5, overlap the connexion between the parts *a*, *b*. The assembled parts are wrapped with a strip *g*² of leather and with wire or thread *f*.



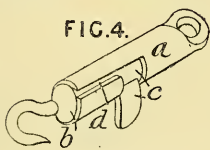
rear end of the socket *C*¹ and having a projection *J* adapted to engage with a slot formed in the side of the socket *C*¹. The part *M* of the lever *J* abuts on the rear vertical part of the staple *F* when in



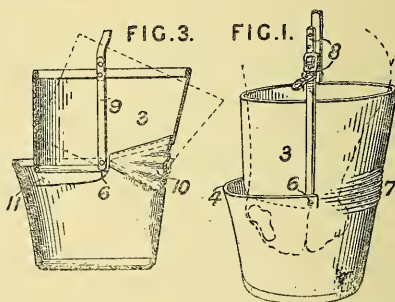
the locked position. To release the staple, the lever *J* is turned in the direction of the arrow, Fig. 2, when the retaining-ends *I*, *I'* can be slid clear of their housings in the recesses *C*, *C'*. The slidable hooks *H*, *H'* are for the front and rear tugs, and the hook *G* for the backband.

13,067. Landgrebe, C. H. June 5.

Fastening traces. A trace connexion, which permits ready disconnexion of the trace in the event of the horse falling, consists of a pair of telescopic members *a*, *b*, the inner of which is provided with a projecting lug *c*, which slides in a slot *d* in the outer member and can be turned down into a recess, as shown, in order to lock the two parts together. The trace is quickly released by pulling round the lug *c* until it can slip along the slot *d*. To prevent accidental uncoupling, the lug, when turned down, may fit into a notch at the front of the recess, and it may be pressed into the notch by a spiral spring enclosed within the parts. To reduce friction, the edges of the lug may be fitted with small rollers adapted to run on the edges of the recess, or the rubbing parts may be rounded.



13,503. Avey, G. H. June 11.

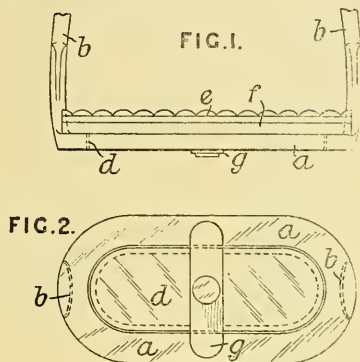


Nosebags are formed with an horizontal slit across the front so that when the animal raises its head the slit opens and allows air to enter. The top 4, Fig. 1, of the lower part of the nosebag is enlarged so that it extends beyond the lower edge of the part 3, and is stiffened by a plate 11. The upper part pivots about the pins 6 securing the head straps 8 to the nosebag, and the rear wall 7 of the bag is crimped or folded so as to be flexible. In a modified form, the two parts of the bag are separate and connected at the rear by a flexible gusset 10, Fig. 3, and the headstraps are connected to bars 9 secured to the inside of the nosebag. In another form, the two parts of the bag are in alignment at the front so that the opening is closed when the animal lowers its head.

13,275. Dolby, B. June 7.

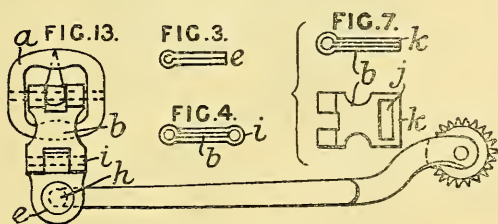
Fastening.—A readily detachable fitting for attaching the backband staple and tug hooks to the shafts of a vehicle comprises a staple *F*, Fig. 1, with outwardly and inwardly angled retaining-ends *I*, *I'* which fit and are locked in sockets *C*, *C'* in or on the shaft *A*. The locking is effected by means of the thumb-lever *J*, Figs. 2 and 6, pivoted at the

14,186. Richards, J. W. June 19.



Stirrups.—In a stirrup having a detachable india-rubber or like tread *e* formed with a projecting part *d* which fits into a frame *a* carried by the stirrup *b*, the tread is secured by a pivoted plate *g* adapted to be turned into engagement with the sides of the frame *a*.

14,295. Greenfield, S. June 21.

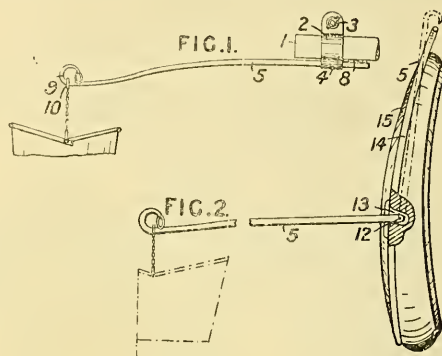


Spurs.—Tackle for spurs is made from sheet metal which is stamped out and folded to the proper shape. Fig. 13 shows one form of tackle as applied to a spur. The pin of an ordinary buckle *a* is encircled by a central link *b* formed of three thicknesses of metal, as shown in Fig. 4. The tail-piece *e*, Fig. 3, is connected to the central link by a pin *i* and has a hole *h* to engage with a stud on the spur. The central link may be made of two thicknesses of metal, Fig. 7, and with a rectangular hole *j* cut in it, so that a bar *k* is left which serves the purpose of the pin *i*. The tackle may also be made by drawing or stamping from seamless steel tubing.

14,727. Smale, L. June 26.

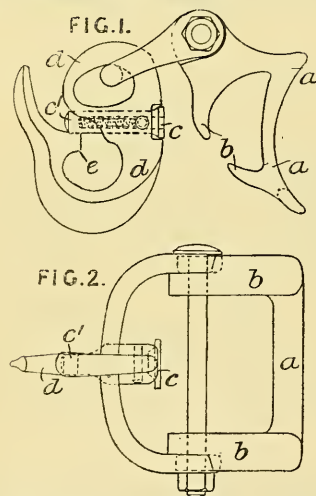
Nosebags and food-containers.—To relieve the head of an animal of the weight of the nosebag, arms are attached to the shafts 1, Fig. 1, by means of a clip 2 held in position by a thumb-screw, or

the like, 3. The bottom of the clip is provided with a short tube or barrel 4, into which the arms 5 are passed, and in which they are held rigidly by flat springs 8. The bucket or nosebag is attached



to the arms by a chain and ring 10 which is held by means of the curved end 9 of the arm. In the case of the fore horse, the nosebag may be suspended from arms 5, Fig. 2, on the collar 15, which are bent to the shape of the collar and made to clip it, the arms being hinged at 12 in a socket 13 formed in the hames 14 and made to drop nearly horizontal to carry the nosebag.

15,382. Owen, W. July 4.

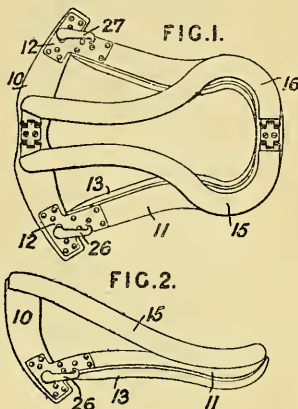


Collars, neck ; fastening.—A coupling for harness for use in connecting the horse's collar to the yoke of a mowing or binding machine, potato digger, manure spreader, &c., of the type described in Specification No. 7426, A.D. 1906, comprises a hook *d* and a frame shaped at *a* to fit the forewale of the collar and secured thereto by the hame chain, which passes between the projecting members *b*. The hook *d* has a spring closing-bolt *c*,

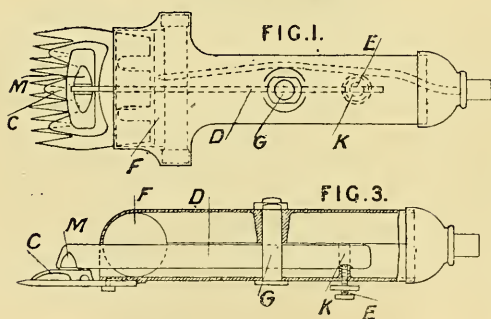
the inner end *c* of which rests upon an inwardly projecting lug or arm *e* and so retains the chain connected to the yoke. With this arrangement, the chain link automatically forces back the bolt *c* when it is pressed into the hook.

15,444. Brodie, P. S. July 16, 1906, [date applied for under Patents Act, 1901].

Saddles. — The saddle consists of a pommel 10 connected to the cantle 11 by plates 12, and the parts are padded at 13 to allow a large space for ventilation. The seat is formed of steel or aluminium frames 15, 16 hinged at the front and rear to the saddle tree, and springs or cushions are placed near to the hinge to add to the resiliency of the frames 15, 16. When not in use, the seat frames can be folded together and secured by a chain and lock, and the parts may be readily taken apart to facilitate packing. The stirrups are supported from hooks 26, 27 fixed to the plates 12.



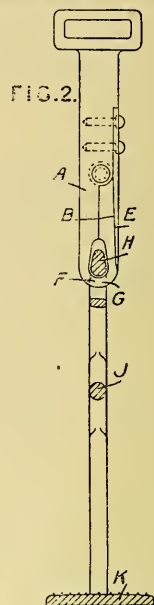
15,791. Preston, J. C. July 9.



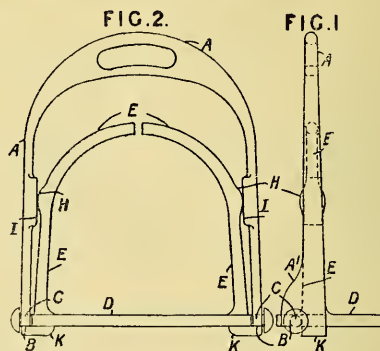
Horse clippers and the like. — The cutter *C* is operated by a reciprocating air piston *F*, situated near the front of the machine, acting in conjunction with a spring bar *D* fixed by a bolt *G* and a stud *K*. The piston *F* and the head *M* of the cutter are slotted to receive the bar. Pressure is applied by a screw *E* acting upwards on the rear of the bar *D*.

17,831. Krieg, H. April 8, [date applied for under Patents Act, 1901].

Stirrups. — The stirrup *K* is suspended from a holder comprising two pivoted members *A*, *B* having at their ends hooks *F*, *G* which support the stirrup iron *H*. If the rider is thrown, the foot engages a bar *J* on the stirrup and, as the stirrup turns, the members *A*, *B* are forced apart against a spring *E*, and the stirrup iron is freed.



18,154. Brooks, J. Aug. 10.

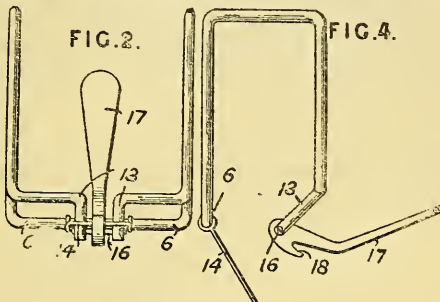


Stirrups. — In a safety stirrup of the type formed with an outer bow and a detachable inner bow and foot-plate, the outer bow *A* is provided with slotted bearings *B*, opening from below in rearward extensions *A'*, in which the foot-plate *D* is pivoted by means of pins *C* attached thereto. The foot-plate rests on projections *K* on the outer bow, and has bent springs *E* with projections *H* which bear against the projecting faces *I* of the outer bow. Should the rider be thrown, his foot engages the springs *E* and rotates the foot-plate and releases it from the outer bow.

19,029. Plowman, W. W. Aug. 23.

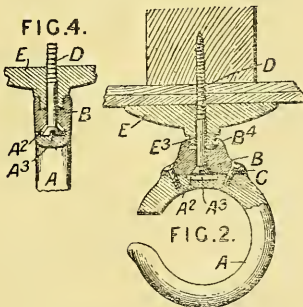
Fastening. — A loop for holding the ends of long tugs against the short tugs of harness is formed from a single strand of wire bent to the shape

shown in Figs. 2 and 4. On a pivot 16 between the parallel ends 13 of the loop is carried a cam finger-lever 17, provided with a notch 18 which engages with a U-shaped bail 14 pivoted to the



middle portion 6 of the loop. The loop is clamped against the tugs by turning up the lever 17, in which position it is maintained, owing to its point of connexion with the bail 14 being then higher than the pivot 16.

19,179. McGrady, O. Sept. 1, 1906, [date applied for under Patents Act, 1901].

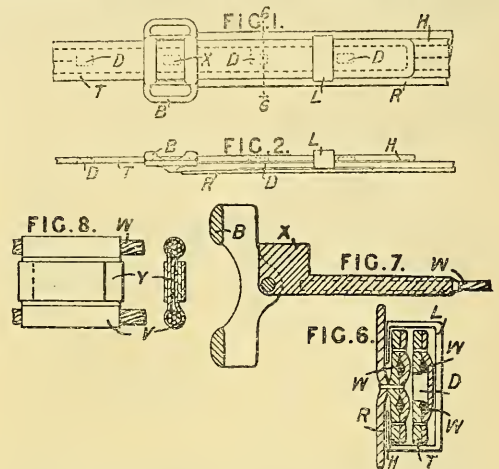


Brackets.—A swivelling hook for supporting harness &c. on walls, ceilings, &c. comprises a hook A secured by screws C to a block B, which turns on a screw D and has a recess B⁴ to receive a reduced part E³ on a fixed disk E. A recess A² in the hook is provided with a cross-bar A³, which, when the hook is pushed upwards as shown in Fig. 4, acts as a screwdriver to engage the head of the screw D. When released, the hook falls by its own weight, and it is then able to swivel.

19,327. Page, S. E., [Rome Saddlery Hardware Manufacturing Co.]. Aug. 28.

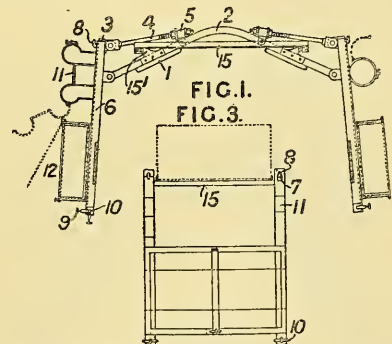
Traces; tugs; hame; fastening.—A trace and hame tug is reinforced by means of metal, preferably wire rope. To form the hame tug H, Fig. 1, two strands W of wire rope are bound together, as shown in Fig. 8, by pieces V of metal strengthened by other pieces Y of metal, the whole being subjected to pressure and soldered to the cables. These pieces of metal, besides binding the ends of the cables, are placed at intervals at the forward end of the cable W and act as stops or abutments for co-action with the buckle tongue X, whereby the trace can be

adjusted. Fig. 6 is a section in the plane 6-6, Fig. 1, and shows how the metal reinforcement is embedded. In the trace T two layers of leather are used, stitched together at the edges. The



openings through the inner layer of leather are made adjacent to the metal stops, as indicated at D, for reception of the tongue X of the buckle. The buckle shown enlarged in Fig. 7 is of special construction, having its tongue permanently connected to the rear portion of the hame tug. The hame tug has a wear leather R sewn to it, and a metal loop L, for the free end of the trace, can move for a limited distance between the wear leather and tug for adjustment. The reinforcement for the trace may have a cockeye attached by a clip to the means connecting the cables W together.

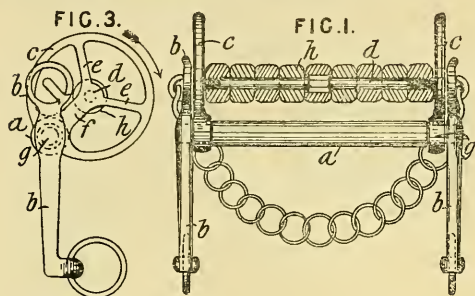
19,608. Schaller, K. F. Sept. 2.



Saddles, pack. Relates to the saddle described in Specification No. 27,951, A.D. 1906. The bows 2 carrying the flaps 1 have jointed to them load-carrying bars 3 adjusted by means of rods 4 adjustable in a slide 5 pivoted to the saddle-bows 2. Bars 6 of the supporting-frame for securing the load may be of U or other section and have apertures 7 by which they are hung upon hooks 8 of the bars 3. The lower ends of the bars 6 are fastened by clamping-screws 9 carried in swivel-bows 10 of the bars 3. Devices 11 on the bars 6

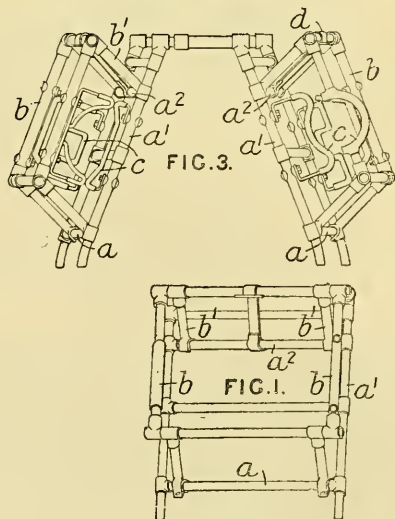
are provided for holding the tripod stand and barrel of a machine gun, and receptacles 12 with hinged covers are for carrying ammunition &c. A removable horizontal frame 15 is carried by plates 15¹ fixed to the saddle-bows 2, and may be detachably fixed by means of clamping-screws borne in swivels of the plates 15¹.

19,653. Hawkins, J. H. Sept. 3.



Bits.—A bit has two mouthbars, one of which is pivoted to the other so as to permit of a semi-gyrotory movement. The bottom bar *a* may be a plain bar, and is attached to the outer cheeks *b*. Inside the cheeks *b*, and pivoted on the bar *a* at *g*, are the auxiliary cheeks *c*, to which is fixed the top bar *d* covered with rubber beads *h*. The bar *d* can be unscrewed from the cheeks *c*. The bridle is connected to the cheeks *c*, the straps passing between the ribs *e*, *e* or *e*, *f* so that the bit can be adjusted to suit the animal's mouth. In a modification, both mouth bars are covered with rubber beads and the auxiliary cheeks *c* have no dividing ribs.

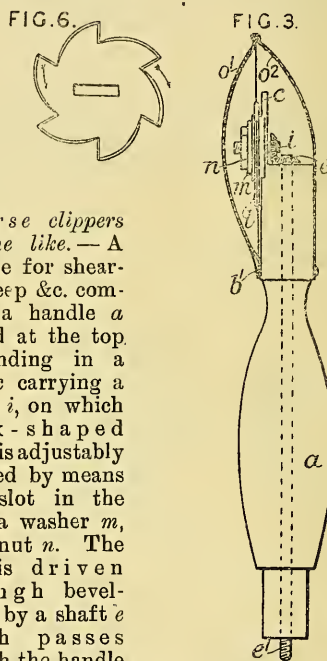
20,783. Morgan, C. E. Sept. 18.



Saddles, pack. To enable guns, tools, &c. to be rapidly placed on a pack saddle without the use of

straps, a detachable outer frame *b* is pivotally mounted on the lower longitudinal bar *a* of each side frame *a*¹. The side frames *a*¹ are attached to saddles of the type referred to in Specifications No. 25,001, A.D. 1905, and No. 8,217, A.D. 1906. The frame *b* lies parallel to the frame *a*¹, and is provided with bifurcated struts *b*¹ which are sprung upon the upper bars *a*². Retaining-clips *c* are provided for the load.

21,089. Wallder, C. E., and Ashton, H. M. Sept. 23.



Horse clippers

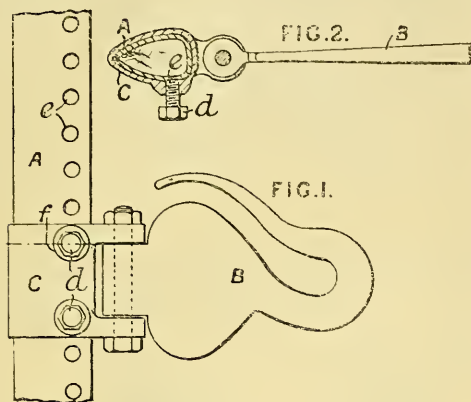
and the like.—A machine for shearing sheep &c. comprises a handle *a* squared at the top and ending in a plate *c* carrying a spindle *i*, on which a hook-shaped knife *l* is adjustably mounted by means of a slot in the knife, a washer *m*, and a nut *n*. The knife is driven through bevel-wheels by a shaft *e* which passes through the handle *a* and is joined to a flexible shaft at the end *e*¹. A circular box, consisting of two plates *o*¹, *o*² fixed to the handle by screws *l*¹, encloses the knife and has a small slot in part of its periphery to allow the knife to pass through, during part of its revolution. The hooked knife may be replaced by a serrated one, as shown in Fig. 6, the cutting-edge being on either side of the teeth.

21,434. Parkes & Gnosill, [Holden & Frost]. Sept. 27.

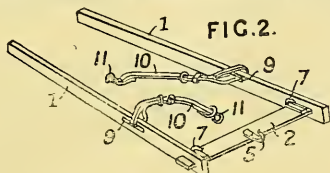
Collars, neck; fastening.—The position of the draught plate in relation to the hame is made adjustable. The mounting *C*, to which the draught hook *B* is attached, wholly or partly encircles the main member *A* of the hame, which has preferably conical holes *e* adapted to receive the screws *d* for securing the mounting *C* in different positions. Bosses *f* on the mounting afford a secure hold for the screws.

(For Figures see next page.)

21,434.

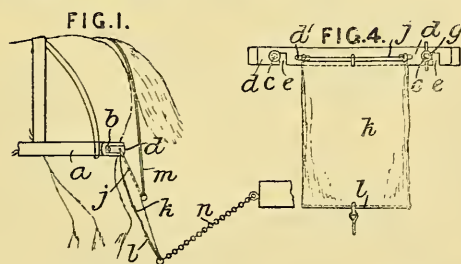


22,048. **Burnett, A. W.** Oct. 5, 1906, [date applied for under Patents Act, 1901].



Harnessing, systems of; back and belly bands.—Where the draught is intermittent, as in loading or unloading hay with a hay fork, the ordinary whipple-tree is replaced by a framework which does not drop against the horse's legs when no pull is being exerted. As shown in Fig. 2, the whipple-tree 2 is rigidly connected to the side bars 1. These bars are supported at one end by the ordinary shaft loops carried by the harness, and at the rear end by adjustable supporting-straps 10 passing through slots 9 in the bars and having hooks at the other end 11 for attachment to the hip ring. The draught hook is shown at 5, and the trace hooks at 7.

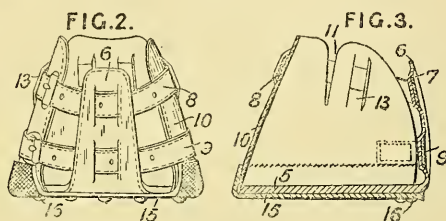
22,249. **Hook, C. G.** Oct. 9.



Droppings, devices for catching.—A dung catcher for draught animals is arranged to be carried from the breeching and to be opened when the animal's tail is raised. A strap b is secured to the breeching a, and two screws c are fixed at each end of the

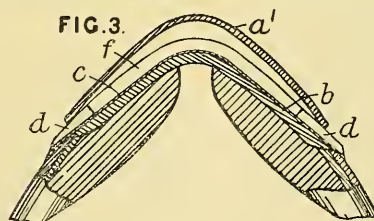
strap. A detachable metal bar d, having bayonet-slots e near each end, fits on to the screws c and is retained by a wing-nut g. A semicircular rod j carrying a bag k, shown closed in Fig. 1, is fixed to the bar d by eye d' so that it can easily rise or fall. The bag has a rod l at its base to keep it extended. The centre of the rod j is connected to the root of the animal's tail by a strap m, so that the mouth of the bag is opened to the position shown in Fig. 4 when the tail is raised. The bottom of the bag is held away from the horse by a cord or chain n secured to the vehicle.

22,364. **Adam, E.** Oct. 10, 1906, [date applied for under Patents Act, 1901].

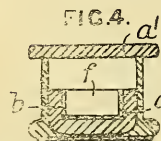


Horse-boots.—An overshoe for use when there is snow or ice upon the ground comprises a heavy leather sole 5 having at the heel an upward tongue 6, of reduced thickness, with slits 7 cut in it to receive straps 8, 9. To the sole is attached an upper portion 10 provided with gores 11 and slits to form loops 13 for the strap 8 which fastens the overshoe on to the foot. The strap 9 is attached to the upper 10 at one side, and its buckle is attached to the other side of the upper. To the lower surface of the sole 5 is secured, by rivets 16 and stitching, the subsole 15 of rubber or similar material.

22,520. **Butler, R. T., and Insley, C. J.,** [trading as Crumpton & Co., T. H.]. Oct. 12.



Saddles for gigs, or those employed for rough or heavy work, are adapted for use with a chain back-band, which passes through a tunnel-like passage f, Fig. 4, in the saddle. A wooden trough b with metal liner c, Figs. 3 and 4, is arranged within the upper part of the saddle, and with the leather top a' forms the tunnel. The ends d are of brass and are

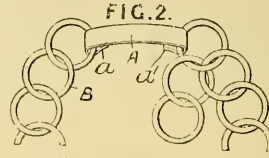


suitably shaped where the chain backband enters the interior of the saddle.

22,580. New Eccles Rubber Works, and Mitchell, F. R. Oct. 14.

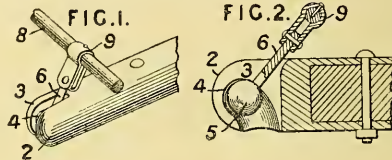
Whips.—Whip handles are made from a composition having Para rubber as its principle ingredient. The rubber is mixed with flowers of sulphur, preferably precipitated sulphur, French chalk, or zinc oxide or like absorbent or desiccating substance, magnesia, and litharge. The mixture is rolled into thin sheets, which are cut into tapering strips and then wrapped on tapering cores or mandrels of steel wire or other material and covered with cambric or other fine cloth. It is then vulcanized, and, after the cloth covering has been removed, the mandrel is withdrawn. The thick end of the stick may be bent to form a handle before it is allowed to set. A steel, cane, or other core may be re-inserted after the mandrel is withdrawn. By increasing the amount of litharge in the composition, a black stick may be produced, while a red colour may be obtained by substituting antimony for the litharge and part of the sulphur. A mottled effect may be produced by sprinkling the material with water during the vulcanizing process.

is turned down on to the end of a piece of open-link chain B. The other end *a'* of the metal plate



is bent over to form a clasp which engages with the links of the chain and, if desired, can be pressed down so as to render the collar undetachable.

22,608. Owens, S. R. Oct. 14.



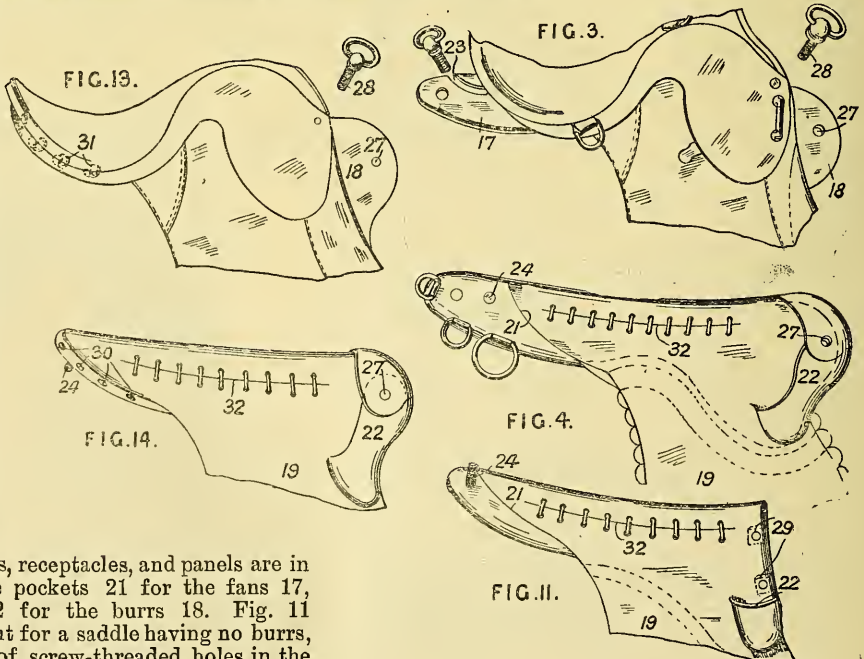
Fastening neck yokes. The metallic tip 2 at the end of a vehicle pole is bifurcated as shown at 3, Fig. 1. On the underside, a concave seat 4 is made for the reception of the ball 5, Fig. 2. The ball is formed on the end of the bolt 6, which is connected as shown to the neck yoke 8 by means of the clip 9 on the yoke. The yoke is thus allowed a limited amount of freedom.

22,599. Parnall, S. F. Oct. 14.

Collars for dogs.—A dog-collar name-plate is made from a flat metal plate A, one end *a* of which

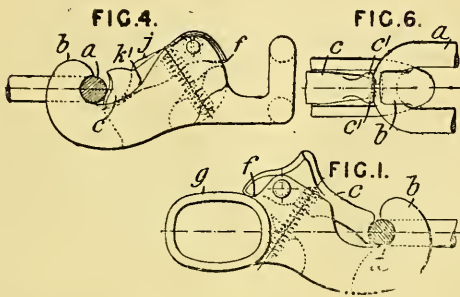
22,652. Jones, H. Sefton-, [Pneumatic Harness, Ltd.]. Oct. 14.

Saddles, pads for.—The panels and air-pad receptacles in pneumatic saddles are arranged so that they are easily removable. Fig. 3 shows a military saddle with the panels and pad receptacles removed. The fans 17 have slots 23 cut in them to receive the valve 24 of the pads, as shown in Fig. 4, which is a side view of one of the panels 19 and pads removed from the saddle. The burrs 18 have screw-threaded holes 27 to receive retaining-screws 28. The pads, receptacles, and panels are in one piece, and have pockets 21 for the fans 17, and flap pockets 22 for the burrs 18. Fig. 11 show the arrangement for a saddle having no burrs, in which case a pair of screw-threaded holes in the



saddle-tree are provided, and a pair of metal sockets 29 are sewn in the panel to secure the device to the tree. Where there are no fans, the method of attachment is as shown in Figs. 13 and 14, hooks 31 on the tree engaging in eyelets 30 in the rear ends of the panels and pad receptacles. The pneumatic pad receptacles have long slots 32 for the reception of the pads, which are made of rubber or other material and are shaped to correspond with the internal contour of their respective receptacles.

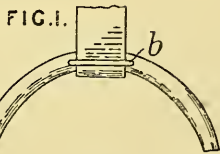
22,858. Lachèze, E. Nov. 7, 1906, [date applied for under Patents Act, 1901].



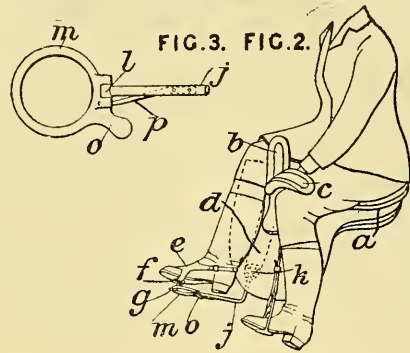
Fastening.—A safety hook for whipple-trees, trace-heads, &c. is formed with a pivoted tongue *c*, Fig. 1, which is shaped at its ends to engage a ring &c. *a* placed within the hook portion *b*. The tongue is depressed against a spring into a slot in the hook to release the ring *a*, and its outward movement is limited by a shoulder *f* bearing against the loop *g* of the hook. Fig. 4 shows a modification, in which the shaped tongue *c* is adapted to engage rings of different sizes, and is formed with lateral projections *c'*, Fig. 6, to engage the ring if turned at right-angles to the hook. A cheek *j* on one side of the hook prevents displacement of the tongue *c* if the ring *a* is turned right back, and the other side of the hook is recessed at *k'* to enable the tongue to be depressed by the finger. The tongue *c* may be provided with a projection for operating it. In a modification, the tongue *c* slides lengthways against a spring.

22,951. Hill, T. Oct. 17.

Stirrups.—The stirrup leather, instead of passing through a slot cut in the top part of the stirrup, completely encircles the stirrup top and is kept in place by means of a metal loop *b* at the front of the stirrup. The top part of the stirrup may be curved outwards.



23,296. Vechten, M. M. van. Oct. 22.

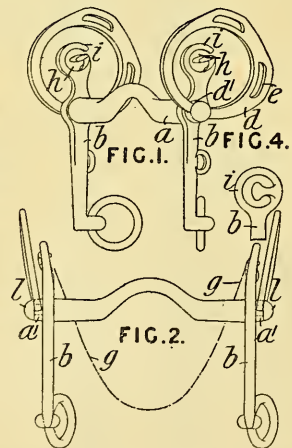


Saddles.—In side saddles a toe-piece for the right foot is provided, whereby the rider can exert an upward pressure against a resistance point and so obtain a firmer seat. Fig. 2 shows a side-saddle tree *a*; *b* is the off and *c* the near crutch, and *d* is the near point. A rod *j* is fixed by a plate *k* to the point *d*, and extends forward into position to coact with the right foot; at its forward end is a hinge stop *l* which limits the movement of the ring *m* hinged to the rod. A light spring *p*, Fig. 3, maintains the ring in an horizontal position after it has been lifted by pressure on the arm *o*. A toe-piece *e* of leather is attached by a strap and buckle to the foot and has connected to it, below the foot, a metal loop *f* with a depending curved hook *g*. The hook *g* engages with the ring *m*.

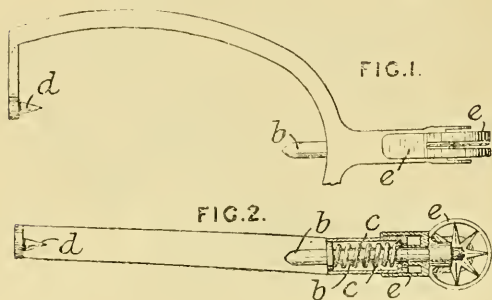
24,493. Cope, J. Nov. 5.

Bits.—Relates to the Chifney bit, and consists in introducing circular side pieces or rings pivoted to the ends of the mouthpiece, in place of the usual straight side pieces. The mouth-piece *a* has the cheek pieces *b* fixed thereto, and outside these at *a'* are pivoted snafflerings *d* with loops *e* for the snaffle rein and headpiece. The heads or rivets *l* prevent the withdrawal of the rings.

In the preferred construction, the rings *d* are provided with bosses *d'* embracing the pivots *a'*. The curb chain *g* may be secured to the bit by the usual eye, by a hook of special shape, as shown in Figs. 1 and 2, having a scroll *h* in a circular head *i*, or by the C-shaped slot shown in Fig. 4.

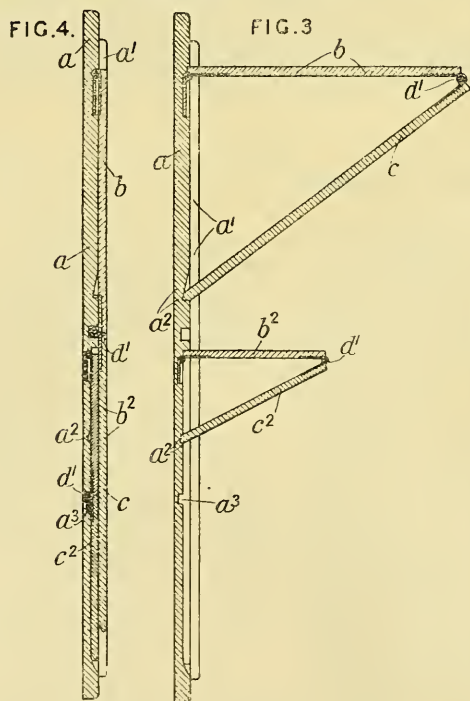


24,809. Mitau, J., and Grether, E.,
[trading as Mitau & Grether]. Nov. 8, 1906,
[date applied for under Patents Act, 1901].



Spurs.—A guard *e*, Figs. 1 and 2, covers the rowel and protects the animal from unintentional goading; but on sufficient pressure being applied to the horse's sides, the guard is forced back against the action of the spring *c*. This spring also actuates the pin *b*, which it presses into a hole provided in the boot heel; this pin, together with the pins *d*, secures the spur to the boot.

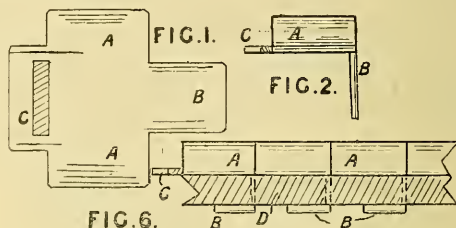
25,761. Pillers, E. Nov. 21.



Brackets.—A collapsible metal &c. bracket for harness rooms, loose boxes, stall pillars, stables, railway horse-boxes, &c. is provided with a wall-piece, to which is hinged a folding member provided with a hinged stay. The wall-piece *a* has a

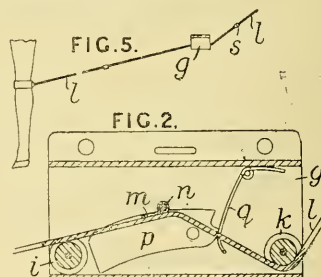
recess or side beadings *a'*, between which the shelf part *b* and the stay *c* are situated when folded flat. Additional bracket arms *b'* and stays *c'* may be provided and arranged to fold into extra recesses, as shown in Fig. 4. Recesses *a''*, *a'''* are provided to receive the pointed ends of the stays *c*, *c'* and the projecting parts of the hinges *d'*.

25,848. Sharpe, E. F. Nov. 22.



Bridles; materials.—Bridle fronts and other parts of harness are made of links stamped from sheet metal, in the shape shown in Fig. 1, so as to have an ear *B* and a loop *C*. The links are then formed into the shape shown in Fig. 2. The ear of one link passes through the slot in the next, and thence through the leather, canvas, or other band *D*, Fig. 6, when the ends are turned back on to the band to form a clip. The ears *B* may be serrated, and the points driven back into the band instead of being folded in contact with it. The links may be ornamented, and the metal body *A* and loop *C* may be cast in one piece. The ear *B* may be made of sheet metal and laid in the body part in the process of casting. Harness pads may be similarly ornamented.

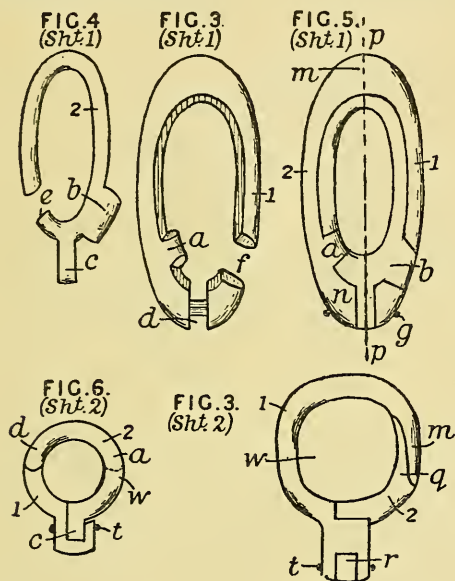
26,124. Hülsmann, A. Nov. 26. *No Patent granted (Sealing fee not paid).*



Stopping and controlling runaway animals.—In a device to prevent a horse from bolting, a box *g*, Fig. 2, with open ends is fixed to the shaft, and contains rollers *i*, *k* over which passes a belt *l*, adjustable in length and carrying a sheet-iron strap *m*. One end of the belt is fastened to the leg of the horse, and the other is held by the coachman. A pin *n* passes through the iron strap *m*, its ends sliding on levers *p* fulcrumed on the box and pressed by the spring *q* with one end against the

bottom of the box. The operation of the device is as follows. Normally the belt *l* is left free so that the pin *n* lies beyond the front of the box, a buckle *s* limiting this distance. If the horse bolts, the belt is pulled so that the pin slides along the levers *p*, and lodges in the rear notch; thus retaining the belt. To disengage it, the belt is pulled a little farther back so that the pin presses against and slips past the spring, and passes below the levers *p*, over the roller *i*, and out of the box.

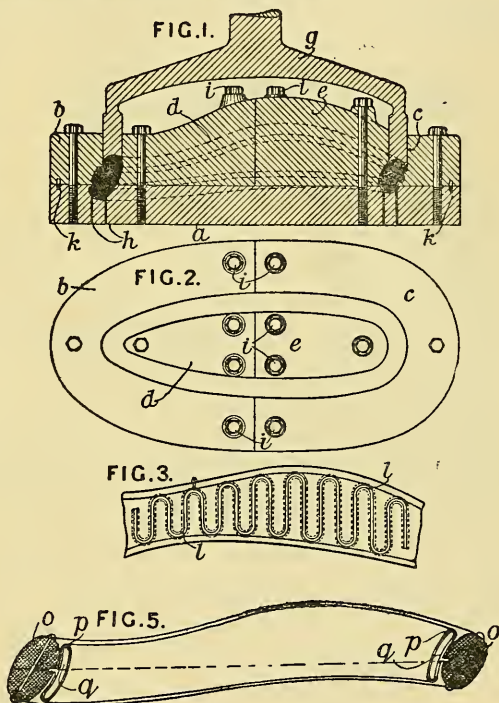
26,221. Tibbitts, J. Nov. 27.



Fastening.—Relates to an improved link, loop, or ring for use with harness, saddlery, &c. In the form shown in Figs. 3, 4, and 5 (Sheet 1), the link consists of body and closing parts 1, 2 hinged together by a pin *g* at right-angles to the longitudinal centre line *p-p*. The body part 1 is formed with a cut-away portion *f* and a filling-piece *a*, and the closing-piece 2 has a cut-away portion *e* and a filling-piece *b*. The parts *m*, *n* of the link are thickened so as to give increased strength. The cut-away portion *f* may be formed at any part of the link, and the closing-piece 2 may be such that it consists of little more than a hinged filling-piece, such as *b*, or it may extend around one or both sides of the outer portion of the body part 1, or around one side only of the inner portion. In the form shown in Fig. 3 (Sheet 2), the meeting faces of parts 1, 2 are in the form of lips *m*, *q*, the meeting faces of which are normal to the plane of the ring, and the parts are hinged together by a pin *t* passing through a lug *r* on the closing-part 2 and a jaw on the body part 1. In Fig. 6, the parts 1, 2 extend to equal distances around the ring and are halved at overlapping parts *a*, *d*. The parts are hinged by a pin *t* passing through the side cheeks of the jaw *c* on the part 1 and a lug *c* on the

part 2. In a modification for connecting a trace to a hame, the links shown in Figs. 3 and 6 (Sheet 2) are provided at parts *w* with curved portions or horns which form a second closed or partly-enclosed space when the link is closed. The parts may be hinged by forming a cylindrical pin or spherical portion on one part and a bearing on the other part. The pins may be secured in the bearings by casting one part around the other, or they may be cast, forged, or otherwise formed separately and then secured together in any suitable manner. The closing-part may be made to move about an axis parallel to the centre line *p-p*. Specifications Nos. 272A and 13,898, A.D. 1906, and No. 10,668, A.D. 1907, are referred to.

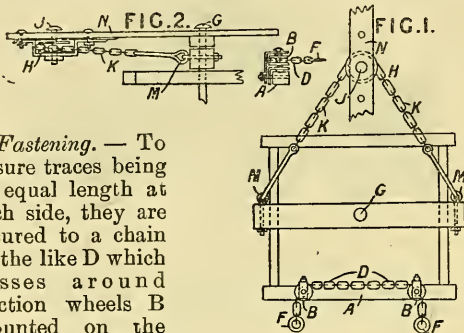
26,324. Schol, H. Nov. 28.



Collars, neck; materials.—Collars for draught animals are moulded in moulds of special construction from wood or paper matter and have pneumatic or other cushions attached. The mould, Figs. 1 and 2, consists of a base-plate *a* and four detachable upper plates *b*, *c*, *d*, *e*, the upper and base plates being connected together by studs *k* and bolts *i*. The upper parts are constructed so as to form a guide for a stamp *g*, and channels *h* are provided in the base-plate to allow the fluid to escape when pressure is applied, sieve plates at the ends of the channels preventing the pulp from being pressed out. When the pulp, which consists of separated wood and paper matter converted into a pulpy mass by being mixed with glue, india-rubber, starch, gypsum,

chalk, baryta, or clay, has been pressed sufficiently, as shown by the stamp reaching a mark, the parts of the mould are disconnected, and the collar is dried and soaked in oil or painted to render it waterproof. The draught fittings &c. are secured to the collar by bolts or rivets passing through holes, which may be drilled or may be formed in the collar during the moulding process. The pneumatic cushion consists of an inflated hose-pipe *l*, Fig. 3, placed between two walls of cloth shaped to the collar and attached thereto by glue or by nails with the heads covered by sailcloth. The collar may be moulded in two pieces, Fig. 5, connected together by pins *o*. Between the two pieces is clamped a casing *p* containing an air-tube *q*.

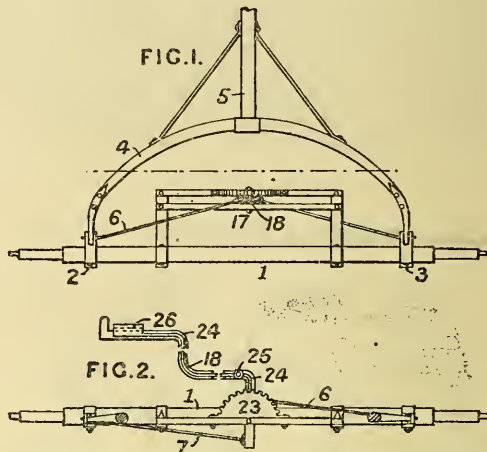
26,411. Edwards, D., and Constable, H.
Nov. 29.



Fastening.—To ensure traces being of equal length at each side, they are secured to a chain or the like *D* which passes around friction wheels *B* mounted on the front bar *A* of the fore-carriage of a vehicle.

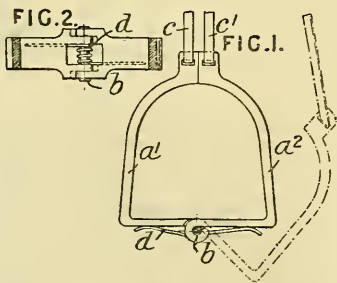
[Reference has been directed under Section 7 of Patents &c. Act, 1907, to Specifications No. 5833, A.D. 1885, Nos. 10,037 and 16,572, A.D. 1893, and Nos. 12,667 and 13,538, A.D. 1901.]

26,696. Willis, P. R. J., [Low, H. H., and Miller, O. E.]. Dec. 3.



Runaway horses, releasing.—When the animal takes fright, the thill and pole of a vehicle are released by the driver by pressing down a foot-lever. The bowled thill *4*, to which the pole *5* is connected, is secured to the clips *2, 3* on the axle *1* by means of bolts *6, 7*. The other ends of the bolts *6, 7* are connected, through eyes, above and below the pivot *17* respectively of a lever *18* arranged to be operated by the foot of the driver. The lever *18* is pivoted to a frame secured to the axle, which frame also carries a toothed segment *23* engaged by a latch lever *24* pivoted to the lever *18* at *25*, the latch lever being provided with a foot-plate *26* arranged a little above the lever *18*. When the foot-plate is depressed the latch lever is released; and on further pressure being applied, the lever *18* rocks and withdraws the bolts *6, 7* to release the thill *4* from the clips *2, 3*.

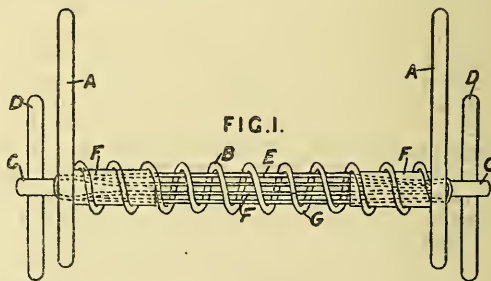
27,271. Ebel, K. F. Dec. 10.



Stirrups.—The stirrup comprises two equal members *a¹, a²* hinged together by a pin *b* round which is a spring *d* having its ends so placed as to act on the underside of the tread portions of the members *a¹, a²* and keep the stirrup in its normal position. Each member *a¹, a²* has its own stirrup leather *c, c¹*. When a rider is thrown, the spring *d* is overcome by the pressure of the foot on the upper part of

the stirrup, and the stirrup opens, thus freeing the foot.

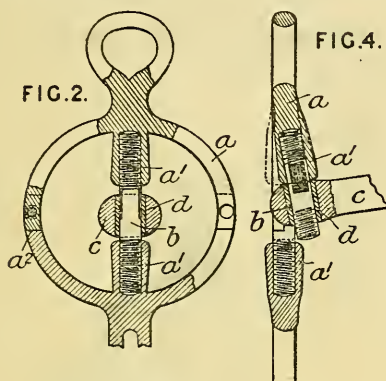
27,973. Osman, J. H. Dec. 19.



Bits.—A bit which is adapted to contract in length, so as to grip the jaws of the horse between plates at its ends when the reins are pulled, comprises a pair of flexible wire loops *E*, or chains,

passing through plates A. The loops are connected, one at either side, to eyes C which carry rings D for attachment of the reins, so that when the reins are pulled, the plates A tend to come together. Short tubes F are secured to the plates A, and a spiral spring G extends between them. If it is not desired to employ the contracting-device, the reins may be attached by slots to the plates A; the bit then operates as an ordinary snaffle.

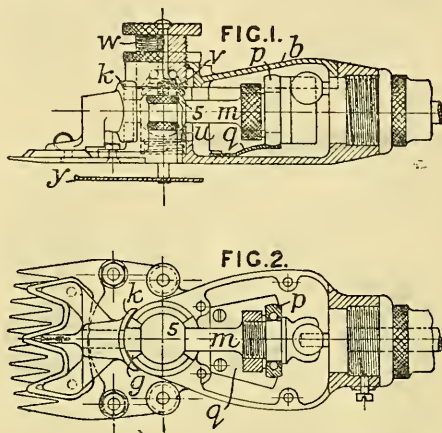
28,158. Moseley, J., and Moseley, W. H. Dec. 21.



Bits. — Relates to bits, particularly of the "Liverpool" type, in which the mouthpiece may slide upon pins carried by the cheek-pieces. In order to resist wear of the pins, they are made of steel or other hard metal, and pass through the steel-bushed ends of the mouth-piece, their ends being secured to the upper and lower parts of the cheek-pieces. In Fig. 2, the mouthpiece *c* with hard metal bearing-bushes *d*, is shown sliding on the pin *b* screwed into the radial bosses *a¹*. The cheek-piece *a* is in two parts connected together at *a²*. Another method of introducing the pins into the cheek-pieces consists in making the cheeks of malleable or annealed metal, when the upper

boss may be displaced as shown in Fig. 4, the pin being inserted and the boss replaced in alignment with the lower boss; or the pins may have the cheek-bosses cast or otherwise closed round them.

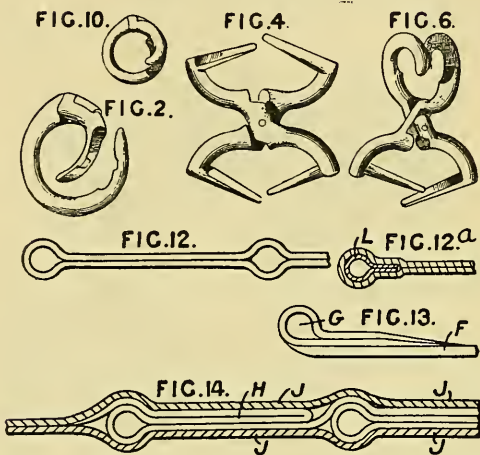
28,683. Wass, W., and Trades Unionists Sheep Shear Co-operative Society. Dec. 31.



Horse-clippers and the like.—The operating-lever *m* of a machine clipper is mounted in a ball-and-socket joint, and pressure is applied by a spring plate *q* pressing upwards at the rear and by a screw *w* pressing downwards at the fulcrum. The ball *5* formed on the lever has a bearing in two cups *u*, *v*, the under one *u* being pressed upwards by a spiral spring, and the upper one *v* mounted in ball bearings in the tension screw *w*. Mounted in ball bearings at the rear of the operating-lever *m* is a roller *p*, which bears upon the spring plate *q*. To exclude dust &c., the front part of the lever *m*, where it projects from the cylindrical front of the casing *b*, is formed with two side flanges *k*, which always keep the opening *q* covered. An adjustable gauge plate *y* may be provided.

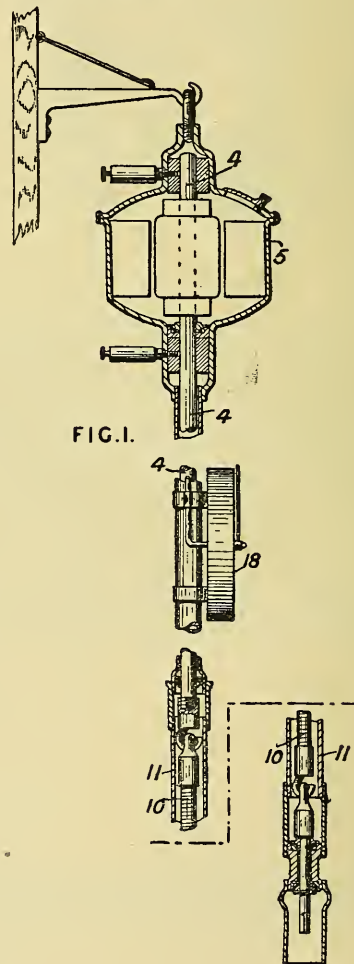
A.D. 1908.

192. Tibbitts, J. Jan. 3.



Fastenings.—Straps and bands of different parts of harness and saddlery, and straps, belts, and bands used in other connexions, are provided at their ends with eyelets or loops formed independently of rings, dees, or other mountings. In place of the ordinary rings &c., detachable fastenings of the kind described in Specifications Nos. 272A and 13,898, A.D. 1906, and Nos. 10,668 and 26,221, A.D. 1907, are used. The bridle, back-band, and crupper straps are provided with loops for engagement with rings, Fig. 10. The hame is connected to the trace by fastenings, Fig. 6, as also are the reins to the bit; and tugs are connected to the back and belly bands by fastenings, Fig. 4. The breeching is connected to the crupper and shaft straps by rings, Fig. 2. Examples of methods of forming loops are shown in Figs. 12, 12^a, 13, and 14. As shown in Fig. 12, the strap is doubled on itself to form two eyelets; while in Fig. 13, separate eyelets G are secured to a strap F. Fig. 14 shows a strap comprising inner strips H folded on themselves to form eyelets, and two outer strips J. The eyelets may be lined with metal L, as shown in Fig. 12^a.

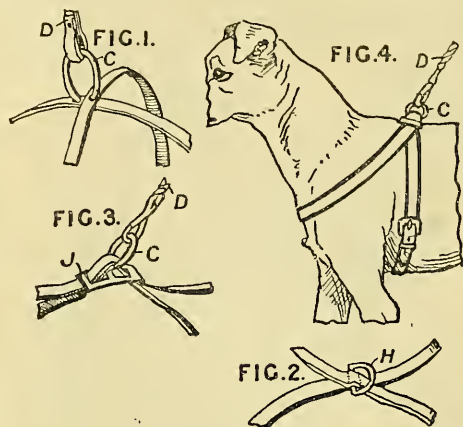
906. Bousfield, J. E., [Boll, P., and Falkiner, R.]. Jan. 14.



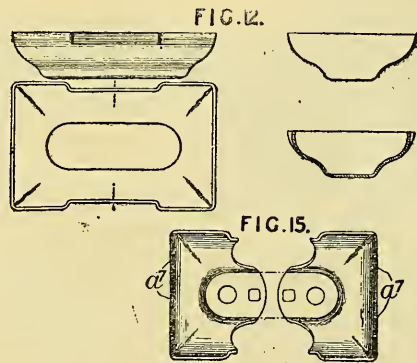
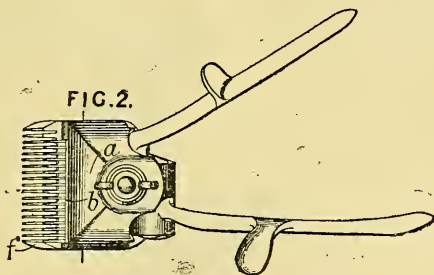
Horse-clippers and the like.—A sheep-shearing machine is coupled directly to the armature spindle 4 of a suspended electro-motor by a flexible shaft 10, the whole running in ball bearings; or a universal joint may be incorporated.

933. Prendergast, M. M. Jan. 14.

Leaders and the like for dogs and other animals.—A harness for dogs and other domestic animals consists of a length of material representing the figure 8, bent at the point of intersection and arranged on the animal as shown in Fig. 4. The lead D is attached to a ring C, which may connect the straps together where they cross, Fig. 1, or a loop H may be used, the straps being then sewn together as shown in Fig. 2. A slotted plate J may also be used to enable the loop to be formed, Fig. 3. The harness may be made of different pieces of strap instead of only one length.



1472. Snushall, E. Jan. 21.

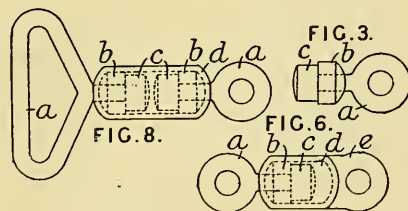


Horse-clippers and the like.—The cap a, Fig. 2, which protects the moving parts is made by stamping from sheet metal. A rectangular blank is dished into the shape shown in Fig. 12, and then

trimmed in successive operations to form two finished caps, Fig. 15. The two front projections a⁷ fit in a groove in the sliding cutter b, and the sides of the cap rest upon the edges of the fixed cutter f.

2090. Bullows, W. L. Jan. 30.

Traces.—A swivel adaptable for traces, chains, hooks, tightening-screws, and the like is made by bending a piece of iron rod to form an eye a and welding the two ends brought together; over the stem a loose collar b is placed, and a head c, rather less in diameter than the collar, is formed on the end of the stem. A short piece of tube d, which will just pass over the collar b, is flattened at one end and pierced to form an eye e, Fig. 6. The head c and collar b of the eye-bolt are inserted in the tube d, and the end of the tube is hammered or welded over the collar b, so that the collar is held firm while the eye-bolt may revolve freely. Two eye-bolts may be fixed in a single piece of tube as in Fig. 8, which shows the invention as applied to a trace end swivel. One of the two eye-bolts may be without a loose collar, the head of the bolt being fixed in the enclosing-tube. A

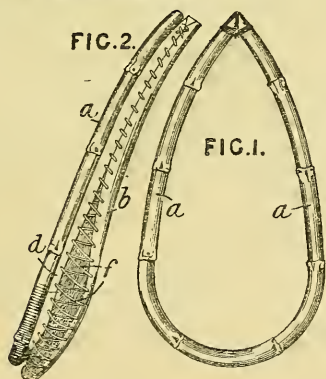


spring swivel is constructed by lengthening the stem of the eye-bolt, and surrounding it with a coil spring between the head c and the collar b. A tightening-screw is constructed by replacing one eye-bolt by a screw bolt passing through the end of the tube d.

2796. Foster, B. E. Feb. 7. [*Cognate Application No. 5321, A.D. 1908, dated March 9.*]

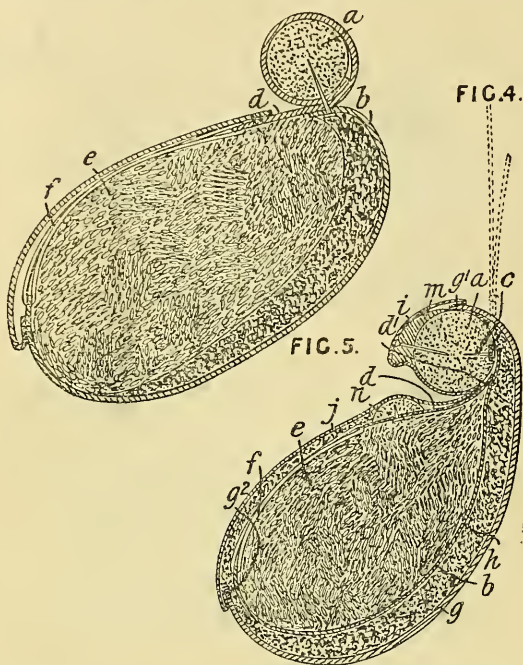
Stuffing-materials.—In the manufacture of elastic fillings for saddles &c. from an aerated mixture of gelatine, glycerine, and a coagulating-agent, the last named is mixed with an absorbent material such as kieselguhr to delay its action until the mixture has been well aerated. The formation of bubbles is assisted by adding a fine material such as zinc oxide or flowers of sulphur. The tanning or coagulating agents used may be one or more of the following, viz.: pyrogallol, glycine, meta- or para-phenylenediamine, hydroquinone, pyrocatechin, paramidophenol, diamidophenol chloride, diamido-resorcin chloride, metoquinone, adurol, eikonogen, metol, gallic or tannic acid, α - and β -naphthol, resorcinol, phloroglucin, and dioxynaphthalin. A mixture of glycerine and gelatine heated to 158° F. is stirred to form bubbles. The mixture is then transferred to the foam-beating boiler, where after adding the tanning agent, it is formed into a foam preferably at a high temperature and under high pressure as described in Specification No. 3314, A.D. 1906, [*Abridgment Class India-rubber &c.*]. The tanning action may be promoted by the addition of alkalis or bromine or by increasing the oxygen content of the air injected.

4422. Overall, A. T. Feb. 27.



Collars, neck.—The forewale of a horse collar is made of a substance, such as cane, that is capable of being shaped and of thereafter retaining its shape with a sufficient degree of elasticity to permit the collar to be widened so as to pass readily over the horse's head, and is also capable of receiving and retaining a fastening such as a nail. The cane is steamed or otherwise heated so as to render it pliant, and is then bent to the desired shape and cooled. Fig. 4 shows a transverse section of a collar in which the shaped core *a* of the forewale is secured, by nails *c*, the border of the inner leather body cover *b*, the barge strip *d* having previously been sewn to the body cover at *d*¹. The cover *b* is arranged as shown to cover the heads of the nails. The space between the cover *b* and the strip *d* is

packed with straw, which is held in by lacing *f*, Figs. 2 and 4. For carriage harness, an outer body cover *g* is provided, the space between which and the inner cover *b* is packed with wool *h*. This



outer cover is sewn at *g*¹ to a golosh *i* of patent leather and at *g*² to another strip *j* of patent leather. To retain the hames, a strip of leather *m* is nailed to the forewale, or the forewale core is shaped, and a strip of cane *n* is nailed to the barge piece *d*. Fig. 5 shows the barge strip *d* folded entirely round the core *a*, the double thickness thereof and also the border of the cover *b* being nailed to the core.

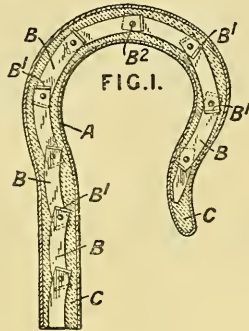
4793. Tasker, R. H., Hescroff, W. M., and Reid, J. March 3.

Animals, stocks &c. for holding.—An apparatus for use in slaughtering cattle &c. comprises a sectional platform *B*, which is adapted to be lowered from the floor level into a tank *A* in the floor and is supported by a weight attached to a cord *C* passing over pulleys *D* and round a pulley *E* on a spindle *E*¹ which carries pulleys *A*¹ connected to the platform by chains. The animal is driven through a door *H* in a frame *F* on to the platform *B*, which then descends into the tank, and the animal's neck is secured by a crutch *K*, which is adjusted by a screw *N*¹ and screw pinion *O* acting on a sliding sleeve *L*, in which slides a rack *M* attached to the crutch and actuated by a hand-wheel *R* through a pinion *Q*. The operator enters by a door *S* in one of the lateral swinging panels *G* and kills the animal, which is then raised to the platform *B* and allowed to fall laterally on to the

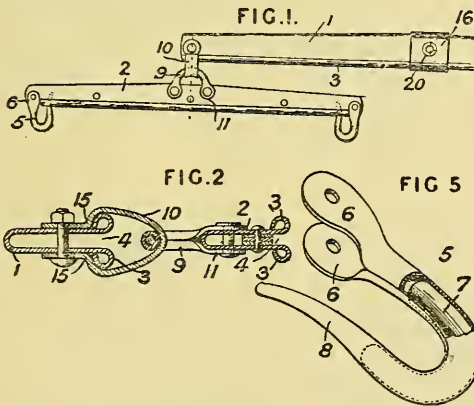
manner described in Specification No. 29,714, A.D. 1897. The cheek ring *c* is divided radially by a bevelled cut *d*, and its inner edge is secured to, or made in one piece with, the outside fold of the portion *b*. A snap *f* is used to keep the divided portion of the ring together.

6186. Robbins, D., and Macready, P.
March 20.

Whips and hunting-crops.—A strengthener for insertion in hollow handles *A* of whips, hunting-crops, umbrellas, &c., before filling with wax or cement *C*, consists of a jointed chain made up of sheet-metal links *B* provided with flanges *B'* and connected by means of rivets *B²*.



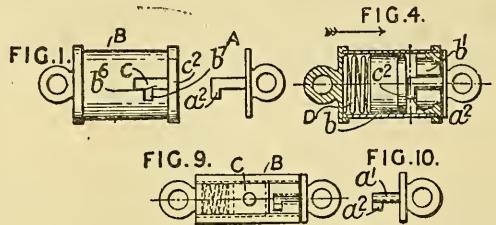
6582. Mackenzie, J. W., [Youngstown Pressed Steel Co.]. March 24.



Fastening traces, hooks and hook fastenings for. The single-tree bar 2 is formed of sheet metal bent to a U-shape section having the free edges rolled outwards, forming tubular ridges 3. The ribs 3 are cut away at each end of the bar 2, and hooks 5 with ears 6 are pivotally attached by means of bolts passing through the bar and through the ears 6. The ribs 3 are cut away at each end of the bar 2, and hooks 5 with ears 6 are pivotally attached by means of bolts passing through the bar and through the ears 6. The hooks are of sheet metal rolled into tapering tubular form, enclosing a reinforcing-rod 7, and bent into hook shape, the meeting edges of the metal being within the bend. The point 8 in the

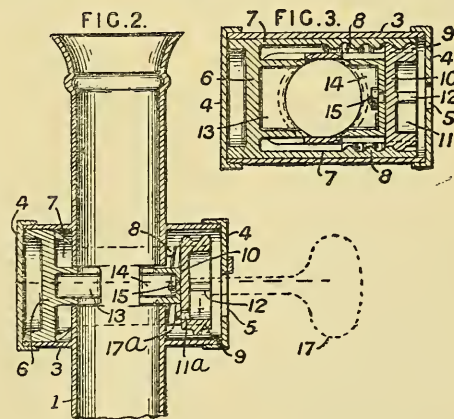
operative position of the hook enters the slot between the ribs 3 of the single-tree and so prevents the escape of the harness trace.

7192. Jones, W. D. Douglas. April 1.



Fastening traces. A fastening-device for securing the traces to vehicles comprises essentially a keep *A*, a holder *B*, and a guard *C* to retain the parts in the engaged position. A part *c²* of the guard-plate is pressed back separately, or by means of the projection *a²* of the keep which slides in a groove formed in the face of the holder *b* and in a block *b¹* within the casing, until the part *a²* can be engaged behind the same, for which purpose a notch *b¹* may be formed in the casing as shown. The guard *C* is thereupon returned, preferably by a spring *D*, and covers the aperture *b⁶*, thus returning the keep in position. In a modification, Figs. 9 and 10, the guard *C* is formed as a block sliding in grooves in the casing part *B* and covering the shank *a¹*, *a²* of the keep when in position. The part *a¹* may in this case be of circular cross-section, having a bitt *a²* attached.

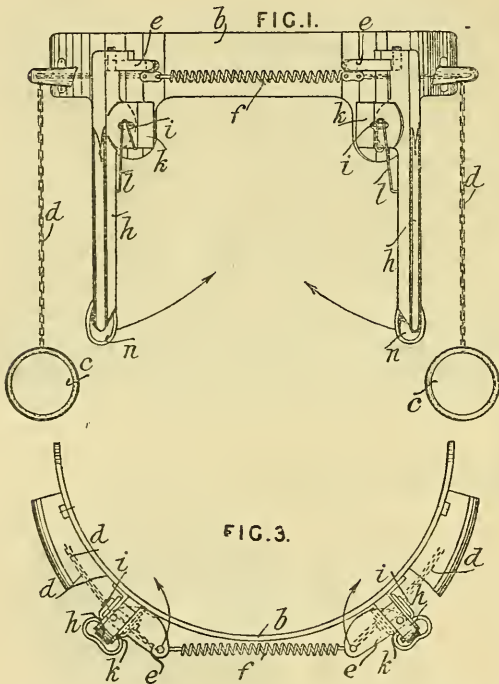
8410. Bergholm, F. J. April 15.



Whip-sockets.—A whip-socket 1, Fig. 2, in which the whip can be locked by means of a key, has a lock casing 3 preferably formed integrally with it. Two caps 4, one of which has a key opening 5, are detachably applied to the casing 3. Located near

to one end of the casing is a non-rotatable head 6, adapted to move longitudinally in the casing and having arms 7, which are provided with grooves 8 upon their inner surfaces to receive a spiral cam 9 on a rotatable head 10, Fig. 3. The head 6 has rigidly attached to it a locking-member 13, and the head 10 is connected to the locking-member 14 by means of a pivot 15. The head 10 also has a recess 11^a for receiving a projection 17^a of the key, and a projection 12 for the keyhead to engage. When the key 17 is rotated, the rotatable head 10 is turned, and the cam 9 and members 7 engage and draw together the locking-members 13, 14 until the whip is gripped.

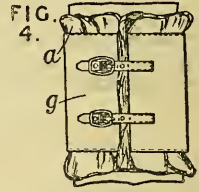
9144. Fröber, G. June 22, 1907, [date applied for under Section 91 of Patents &c. Act, 1907].



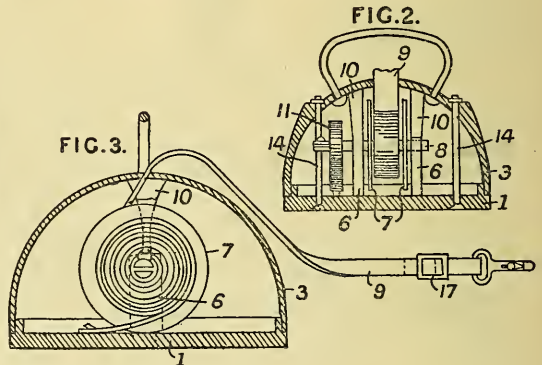
Bridles; stopping and controlling runaway and restive animals.—The nostrils of a horse are closed by pads when an extra strong pull is given to the reins. The device is carried by a curved member *b* mounted on the bridle noseband. The nostril pads *n* are secured to levers *h* pivoting on pins *i*, carried by lugs *k* on the member *b*. The levers *h* are held off by springs *l*. Pivoted to the top of the levers *h* are two curved or eccentric plates *e*, connected together by a spring *f* and actuated by chains *d*. The chains *d* are connected by rings *c* with the bit rings, so that when a sufficiently strong pull is given to the reins, the curved plates *e* are rotated in the direction of the arrows, Fig. 3, and the levers are turned on their pins *i*, thus bringing the pads into action.

9318. Stevens, W. S. Aug. 7.

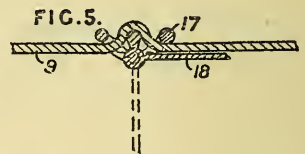
Pads; clothing for animals.—Pads, for use in horse-clothing and for veterinary, surgical, and like purposes, which, in use, are covered by leather or other unyielding guards or bandages, are shaped to encircle the limb, forming a continuous bearing surface, and are made of cotton-wool, wool waste, silk waste, or the like completely enclosed by gauze or net material, or are of double pile fabric woven face to face; the meeting edges are preferably bevelled so as to overlap without increase of thickness, or are made to meet exactly. Fig. 4 shows a pad *a* and guard *g* in use.



9343. Barnett, J. B., and Mitchell, F. April 30.



Tethering animals.—The hitching-rein used for tethering animals is secured at one end to a spring-actuated roller in a casing so that it cannot trail on the ground. The casing is made up of two parts, a bottom 1 and a hood 3, held together by bolts 14, Fig. 2. The spool 7, to which the hitching-rein 9 is secured in any suitable manner, is carried by a spindle 8 journaled in a bearing 6 with guards 10, Fig. 3. A spring 11 is secured to the spindle 8 and to the bottom 1 in such a manner as to tend to retract the rein into the casing. A clamp 17 is placed on the strap to hold a suitable length out of the hood, and is fixed thereon by means of a lever 18 which raises a reef on the strap.

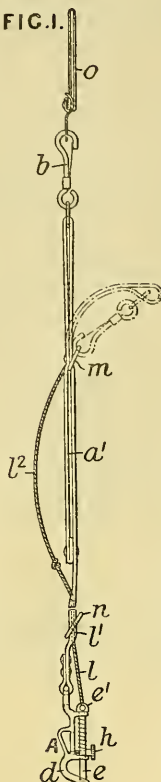


9352. **Diss, A.** April 30.

FIG. 3.



FIG. 1.



Dog leashes.—Relates to a slip-leash, for dogs and other animals, of the kind having a slip-hook at one end, from which a releasing-cord extends up the lead. The animal's collar is held in the mouth *d* of the slip-hook *A* by a spring-pressed bolt *e*, which can be lifted to release the collar by means of a guided bolt *h*, or by pulling the cord *l*. The knotted end of the cord is secured in the head *e'* of the bolt, and the cord passes up through the interior of the leash at *l'* and is connected to the end of the leash so as to form a holding-loop *l'*. At the holding-end of the leash is a snap-hook *b*, which can engage a sliding ring *m* to form a holding or retaining loop, or a ring *n* when it is desired to pass the leash round the waist; or the snap-hook may be attached to a loop fitting *o*, through which a belt may be passed.

9355. **Szax, M., and Krisztman, A.** April 30.

FIG. 1.

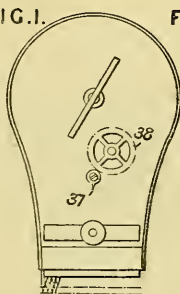
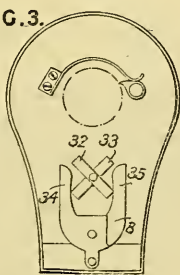


FIG. 3.



Horse-clippers and the like.—The reciprocating blade 2, Fig. 2, is operated by means of rotating cross-arms 32, 33, Fig. 3, through the forked end 34, 35 of a rocking lever 8. The arms 32, 33 and respective parts 34, 35 are in two different planes as shown in Fig. 4. The starting and stopping mechanism comprises an arm 31, which slides

vertically on the pin 28 and engages the vane 25. An arm 29 rigid with the arm 31 carries a pin 30, which is spring-pressed into a hole in the wheel 22 when the apparatus is at rest and is disengaged

FIG. 2.

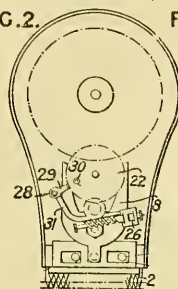
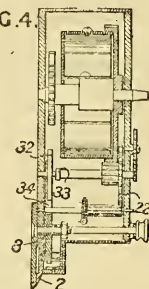


FIG. 4.



therefrom to start the apparatus. A tooth 37, Fig. 1, on an external pinion on the driving-shaft, indicates how far the spring has run down, by rotating the wheel 38.

9361. **Silver, W.** Jan. 9, [date applied for under Section 91 of Patents &c. Act, 1907].

FIG. 1.

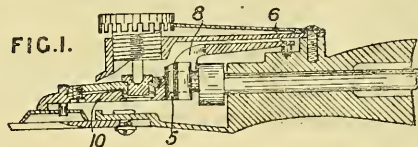
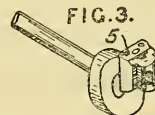


FIG. 3.



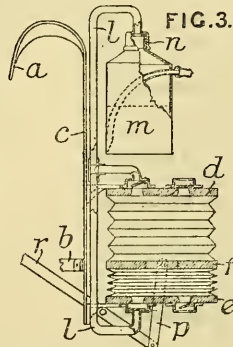
Horse-clippers and the like.—The vibrating lever 10, Fig. 1, fulcrumed at its near end 6 is pierced with a cylindrical jaw 8; and the cylindrical slider 5 is made a loose fit for the jaw and has parts cut away as shown in Fig. 3.

9732. **Berger, J.** May 5.

Curry-combs.—

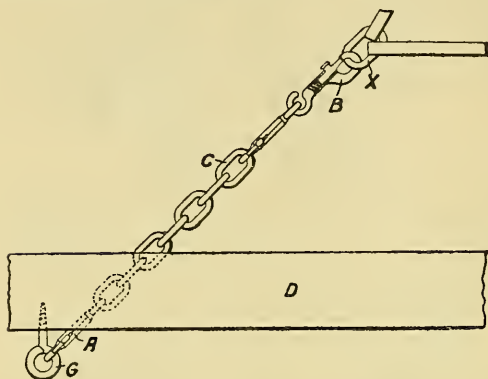
Apparatus to be carried on the back for exhausting air for grooming horses, milking cows, &c. consists of a pair of bellows and a washing-chamber. The apparatus is provided with upright pieces *c* furnished with hooks *a* to go over the shoulders and a belt *b* to go round the waist.

The bellows are formed with two fixed end plates *d*, *e*, bearing the usual valves, and a moving plate *f*



operated by a hand-lever *r* and link *p*. The suction pipe *l* of the bellows is attached to the cover *n* of the washing-chamber *m*, and serves to support it.

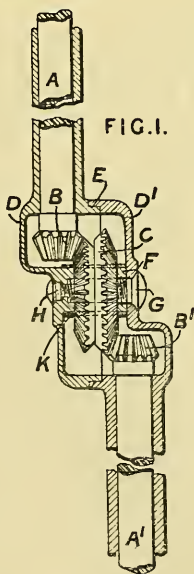
10,495. Thomas, E. May 14.



Fastening breeching. A harness breeching is fastened to the shafts by means of a chain *C* with suitable clip-hooks *A*, *B* at each end, one hook engaging with a ring *G* on the shaft *D* and the other, which may be a double spring-closed hook to allow of adjustment, is connected to a ring *X* on the breeching.

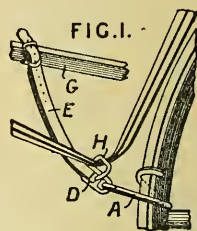
10,713. Falkiner, R. May 16.

Horse-clippers and the like.—Bevel-gearing, applicable for connecting shafting in sheep-shearing and like machines, and permitting universal movement, is provided with an oil-tight casing. The shafts *A*, *A'* are provided with bevel-wheels *B*, *B'*, both gearing with a double wheel *C*. The two halves *D*, *D'* of a circular casing, concentric with the wheel *C*, form an overlapping oil-tight joint *E*. To hold the halves together, set-screws *G*, *H* are passed, one within the other, from opposite sides into the spindle *F* on which runs the boss *K* of the bevel-wheel *C*.

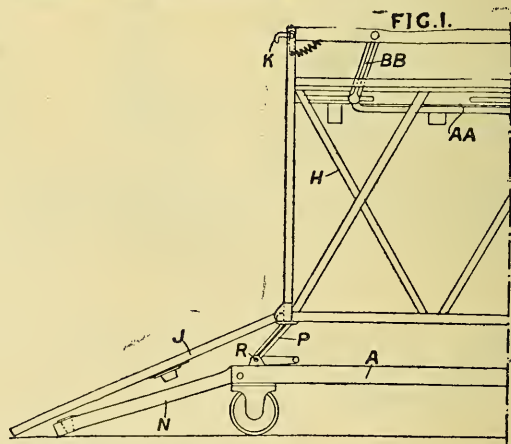


10,714. Hobbs, A. J., and Jewell, J. R. May 21, 1907, [date applied for under Section 91 of Patents &c. Act, 1907].

Stopping and controlling runaway and restive animals; fastening.—In order to lock the wheels of a vehicle when the horse is left unattended, a spiral leather-covered hook *A* is passed round the rim of the wheel and is connected through a ring *D* and strap *E* to the shaft *G*, Fig. 1, or other fixed part of the vehicle. The ring *D* has a curved arm or retaining-hook *H*, and a sufficient space is left between this arm and the ring to enable the reins to be passed into engagement therewith so that they will be tightened if the vehicle is drawn forwards. Check reins may be attached to the ordinary reins and can be permanently in engagement with the ring *D*, their free ends being attached to the vehicle.

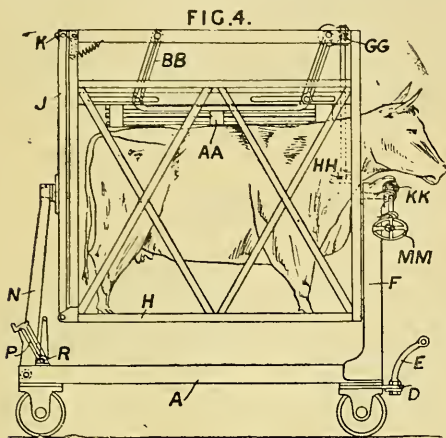


10,804. Freedman, H. May 18.



Animals, stocks &c. for holding.—A casting-machine and ambulance comprises an iron cage *H* supported on trunnions in brackets *N*, *F* on an undercarriage *A*, the front swivelling wheels of which are connected by a rod *D* carrying hauling-arms *E*. The end *J* can be lowered for the entry of the animal, as shown in Fig. 1, the bracket *N* being turned down as shown, and the cage then supported by arms *P* on a cross-shaft *R*. The arms *P* can be turned into the position shown in Fig. 4 to lock the bracket *N* in its normal position. The cage can be inverted by turning it about its trunnions by means of worm gearing *KK* and a handle *MM*, the weight of the animal being then taken by a saddle-piece *AA* supported by links *BB*, which can be swung about their pivots, to adjust the saddle-piece to the animal's back, by worm gearing *GG* and a hand-wheel *HH*. One side of the cage can be swung out about its

upper edge, and this side and the end J are retained in their normal positions by spring catches K. Specifications No. 13,823, A.D. 1892, No. 18,802, A.D. 1898, No. 5388, A.D. 1902, No. 16,430, A.D.



1904, and No. 26,706, A.D. 1905, are referred to. According to the Provisional Specification, racks and pinions may be used to adjust the top of the cage to the animal; provision is made for securing the animal's feet in the cage; and the inside of the cage may be padded.

11,168. Holt, M. May 22.

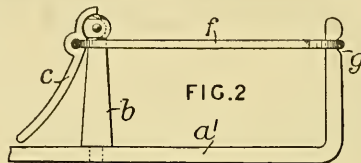
Cleaning and polishing apparatus.—A hand appliance for use in cleaning knives, forks, spoons, plate, saddlery fittings, &c. comprises a brush B carried by a stock A and surrounded by a ring C of felt or the like. The stock is shaped to form a handle, or a separate handle may be inserted at right-angles to the stock. The bristles are secured to a block of wood which is glued in a recess in the stock. An apertured screw piece D, or a projecting tube attached to the tool, serves to facilitate the straightening of bent fork prongs.



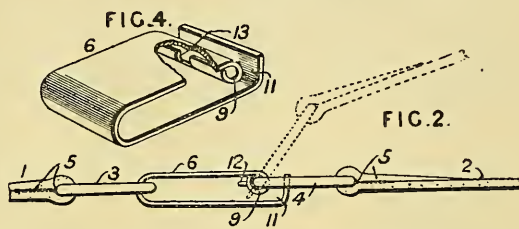
11,302. Dotzel, T. May 25.

Fastening.—A draw-hook for attaching draught-bais &c. to ploughs and other horsed implements consists of a bent link a^1 having a hinge-pin b to which is pivoted a lever c provided with a strap or buckle f adapted to engage a notch g in the vertical limb of the link a^1 . The strap f can be released

from the notch g for the introduction or removal of the draught-bar by lifting the lever c .

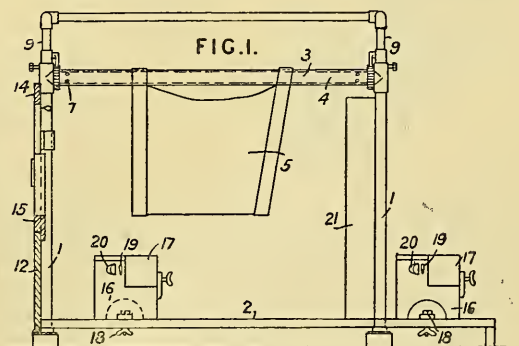


12,020. Rupp, P. D. June 3.



Fastening.—A connector for coupling harness straps comprises a hook-shaped member 6 having an eye 9 in which is retained a loop 4 connected to a strap 2. The eye 9 has a slot 13, Fig. 4, in which a tongue 12 on the loop 4 works to limit the relative movement of the hook 6 and loop 4. The tongue 12 also serves as a guard to prevent the loop 3 from leaving the connector when the straps are slack. To couple the strap 1 to the connector, the loop 4 is raised into the position shown in dotted lines and the loop 3 is then passed through the space 11. The loops 3, 4 have projections 5 confined between the folds of the straps to prevent the loops from turning.

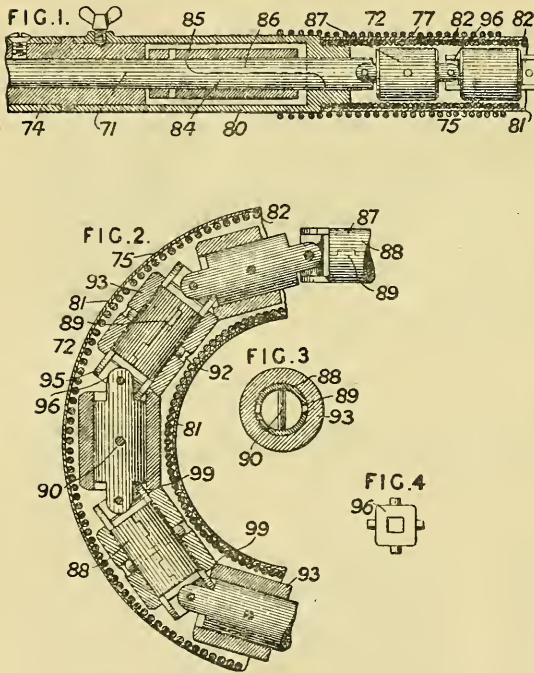
12,056. Appelqvist, O. L. June 6, 1907, [date applied for under Section 91 of Patents &c. Act, 1907].



Animals, stocks and the like for holding.—An apparatus for holding cattle &c. during the paring of their hoofs comprises four tubes 1 telescopically joined to a vertically adjustable frame 9 and supporting tubes 3 enclosed by tubes 4 which support a hoisting

hammock 5 for raising the animal, and can be turned by levers inserted in holes 7. A door at the front consists of a hinged panel 12 and a sliding panel 14, each having a portion cut away to provide an opening for the animal's neck; a removable lining 15 is connected to the panel 12. The animal's feet are fastened to blocks 17 by ropes passing over hooks 19 which may have guards 20. The blocks 17 are detachably secured to supports 16, so that they can be replaced when worn, and the supports are adjustably pivoted by screws 18 on the floor 2, which has a number of holes to receive the screws to enable the supports to be adjusted along the floor. A rope is stretched behind the animal between the two back pipes 1, or, for shorter animals, against the edges of two boards 21. The hammock 5 may be cut away behind to obviate pressure on the udders of cows.

12,073. Hale, A. L. June 3.

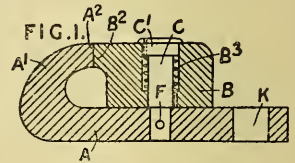


Brushing-apparatus for grooming; horse-clippers and the like.—In flexible shafts for operating brushes, cutters, &c., one end of a terminal stud 71 is detachably connected to a flexible-shaft section 72, the other end being connected to one element of a universal joint. Sheaths 74, 75 are arranged around the parts 71, 72 respectively, the junction of the two being provided with an additional reinforcement of coiled wire 77. The sheath 75 comprises an inner member 82, formed of a spiral wire coil, and an outer sleeve 81 of flexible material, such as woven fabric. Correspondingly flattened parts 84, 86 are provided on the stud 71 and shaft section 72, and are enclosed in a socket 85. The

links 87 of the shaft section are formed in semi-cylindrical members 88, having interlocking lugs and notches 89 and secured together by pins 90, which also engage apertures 92 in wearing sleeves 93. The ends of the links have spaced lugs 95, adjacent links being connected by coupling-members 96, preferably shaped as shown in Fig. 4. The ends 99 of the bushes 93 are adapted to contact with each other if excessive flexure of the shaft is attempted.

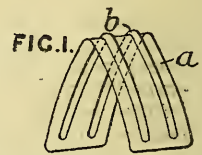
12,276. Gamble, S. L. June 5.

Fastening.—A snap-hook fastening for traces, chains, and the like comprises a part A, bent round at one end to form an open hook A¹, which is adapted to take the strain, and a part B, pivoted on the part A and adapted to close the hook. The block B swings on a pin C secured in the hook A by screwing or by a cross-pin F, and is retained in a closed position by a spring seated in an enlargement B³, and connected at one end to the block and at the other to the pin C, or carriage A. Corresponding projections and recesses may be provided on the parts A, B to give a positive engagement, the flanged head of the pin C being dispensed with, so as to allow longitudinal motion and release of the block B. The engaging surfaces are oblique, or the ends A², B² may be grooved and tongued to interlock. A hole K is provided for attachment. A hook may be formed at each end of the carriage A. The hook part is formed by stamping or drop forging, but the movable arm may be cast.



12,492. Mills, C. K., [Guilleaume, R.]. June 10.

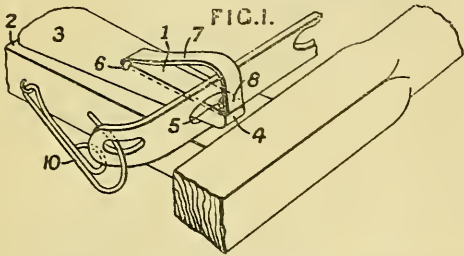
Saddles.—The sheet-metal tree *a* of a harness saddle is rolled or stamped to produce two ribs *b*, which are of greater width and height at their centre than towards their ends. The ribs serve as guides for the back-band. Specification No. 23,634, A.D. 1906, is referred to.



13,444. Cunningham, A. V. June 24, 1907, [date applied for under Section 91 of Patents &c. Act, 1907]. No Patent granted (Sealing fee not paid).

Fastening.—A device for preventing traces from being accidentally displaced from the whipple-tree is shown in Fig. 1. The fastener consists of a flat resilient piece of metal 1, bent round the end of the whipple-tree 3 as at 4 and riveted to it at 5.

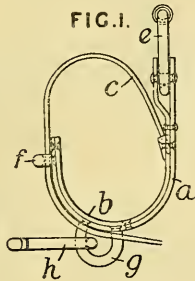
The strip is passed under a staple 6 and is bent to form a resilient arm 7 with depending end 8 normally held in contact with the whipple-tree by its own elasticity. In modifications, the fastener



can be made in two parts joined together near the staple, and the end 8 of the arm 7 can be more securely retained by being passed under a staple at the end of the whipple-tree. The end of the trace is held by a hook 10 on the connecting-bar 2, which prevents it from coming into contact with the vehicle wheels.

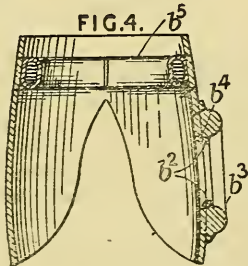
14,138. Mills, C. R., [Guilleaume, R.]. July 3.

Tugs, shaft.—A shaft tug comprises a U-shaped portion formed from two plates *a, b* to one end of which a strap *c* is secured. The shaft is supported by the U-shaped portion, and the strap *c* passes over the shaft and through a loop *f* on the member *a, b*, and is threaded over a ring *g*, where it is kept in place by a spring belly-band hook *h*. The plates *a, b* are separated at one end and carry between them a back-band ring *e*.

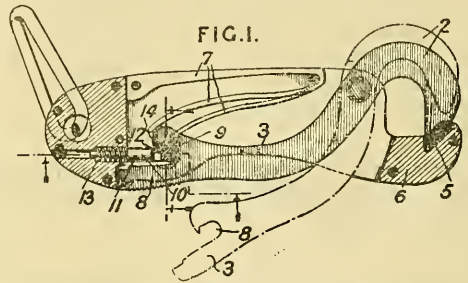


14,190. Kenyon, J. W. July 3.

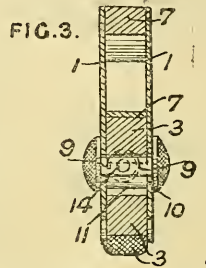
Horse-boots.—Fetlock shields or boots for preventing cutting are provided with apertures arranged to be immediately over the sore; and around the aperture *b*² is secured a leather or other ring *b*³ rounded off at the inside *b*⁴ to avoid a sharp edge. An india-rubber tube or band *b*⁵ is fitted to the inside of the upper part of the boot, to surround the leg of the animal.



14,304. Barnick, F. July 6, 1907, [date applied for under Section 91 of Patents &c. Act, 1907].

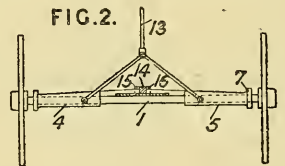


Fastening.—A safety release hook for draught or collar chains, traces, &c. for horses &c. comprises an S-shaped pivoted jaw 2, the tip of which engages a recess 5 in a fixed jaw 6. A spring 7 tends to open the jaws. The rear end of an arm 3 connected to the jaw is formed with a slot 8 to receive a cross-bolt 9, which moves in slots 10 in the cover-plates 1 and is pushed forwards by a bolt 11 and spring 13. When the hook is closed, a projection 14 at the end of the arm 3 engages a notch in the neck 12 of the bolt 11 to prevent accidental release. There is sufficient play at the end of the jaw 2 to enable the projection 14 to be moved out of engagement when the hook is to be opened.



14,495. Holz, E. July 8. No Patent granted (Sealing fee not paid).

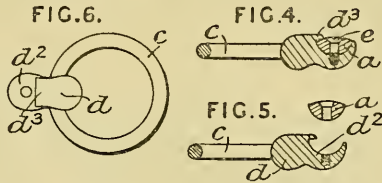
Runaway horses, releasing; fastening.—In a device for simultaneously releasing runaway horses from and applying a brake to a vehicle, sleeves 4, 5, mounted on the axle 1, are provided with extensions adapted normally to engage recesses 15, 16 in the pole 14. By operating the rod 13, however, the extensions are retracted to release the pole, and at the same time the disks 7 on the outer ends of the sleeves are forced against the hubs of the wheels.



14,983. Smith, T. A. July 15.

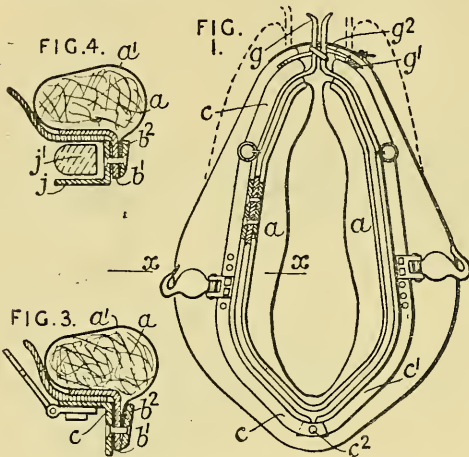
Collars, neck.—The rein loop and trace extension are secured to the hames by means of lugs which partly surround the hames and are secured thereto by screws or rivets. The rein loop *c*, Fig. 4, is rigidly or loosely connected to the lug *d*, which has

a hollowed-out portion d^2 and a lip d^3 . The hame a fits into the recess d^2 and is secured by the screw e



or by a rivet. Projections may be made on the hame above and below the lug in order to give additional support.

15,374. Hardwick, W., and Hardwick, J. E. July 20.

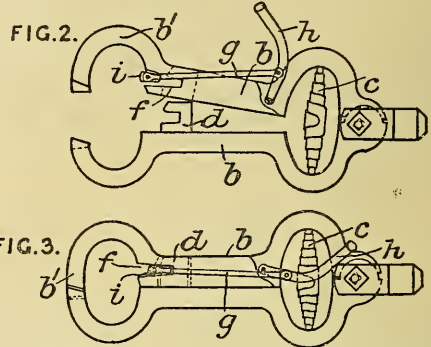


Collars, neck.—The fore-wale of a horse or other animal collar is formed of two metal frames hinged together at the bottom of the collar, the frames being used either instead of hames or to carry hames. Fig. 1 shows the complete collar in which the frames c , c^1 are of rectangular cross-section, hinged at c^2 in such a manner that the collar can only open to a limited extent. The upper ends g of the frames are secured by a strap as g^1 , the terminals of which are secured to the collar, in addition to the usual strap g^2 . Fig. 3 shows a sectional view on the line $x-x$ of Fig. 1, in which the collar a is provided with a barge strip b^1 between which and a face piece b^2 the covering a^1 is placed, the three being sewn together and then riveted to the fore-wale c . The draught hooks are adjustably secured to the metal frames j , which serve as hames. In Fig. 4 the frames are shown reversed so as to constitute a groove or channel for separate hames j^1 .

15,686. Goldbach, G. July 23.

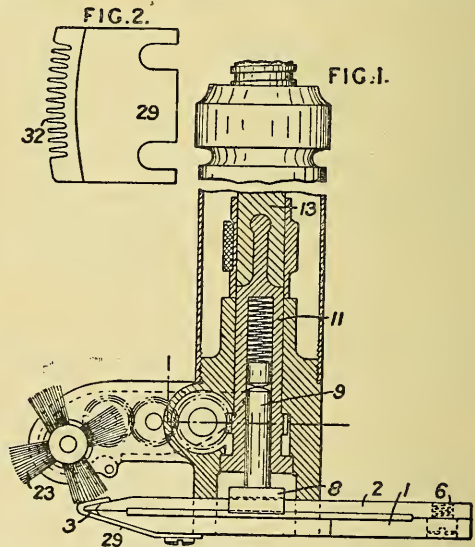
Fastening.—A trace is secured to the vehicle by means of an easily releasable coupling comprising two jaws, which are closed against the action of a

spring and locked by a sliding bolt. The trace ring is retained by the mouth b^1 , shown open in Fig. 2, formed by the ends of the jaws b , which are opened by the spring c . The lower jaw has a



hook d entering a slot in the upper jaw when the coupling is closed. A bolt i sliding in a slot f enters the notch in the hook d , being moved by a link g and lever h .

15,779. Levray, O. Cordier. July 24.

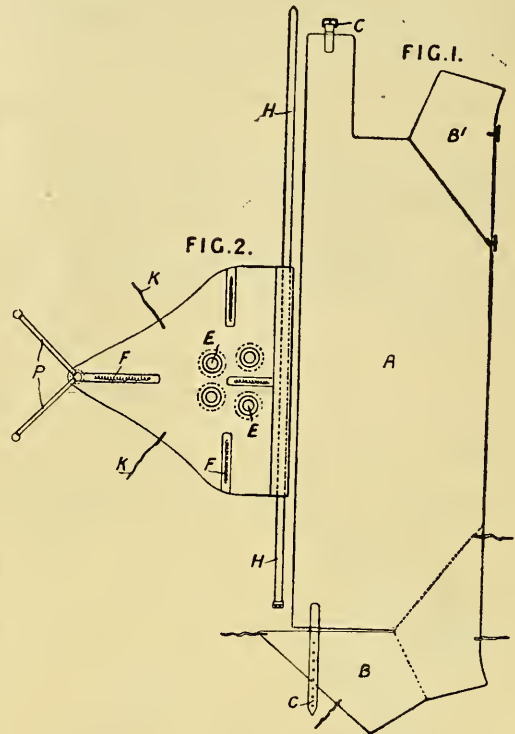


Horse-clippers and the like.—A hand-tool for cutting the floating threads of fabrics has a pair of serrated reciprocating cutting-blades 1 , 2 , Fig. 1, protected by means of a closely-fitting guard 29 , Figs. 1 and 2, having perforations 32 arranged in front of the cutting-teeth 3 . The blade 2 is pivoted at 6 to the fixed blade 1 and is reciprocated by a fork 8 on the spindle 9 connected by an eccentric socket to the spindle 11 , which is rotated by the flexible shaft 13 . A brush 23 for moving the threads through the perforations of the guard into engagement with the cutters is rotated through gear-wheels driven from the flexible shaft 13 .

15,812. Eddison, G. July 25.

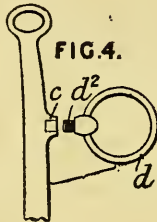
Clothing for animals.—A covering for the udder and hinder part of the body of a cow &c. during milking, to prevent foreign matter from falling into the milk pail, is made in one or more sections of india-rubber or other flexible material. The body-portion A is fastened by straps C at its anterior edge and has flaps B, B' which encircle the hind legs. The udder-portion is attached by a strap H, which passes over or under the front of the part A, and, passing between the hind legs, is fastened by straps P and tapes K to the rear of the part A. Steel springs or elastic strips are inserted at F to draw the cover tight against the udder, and each of the apertures E is fitted with flexible rubber &c. rings to embrace the teat.

(For Figures see next column.)

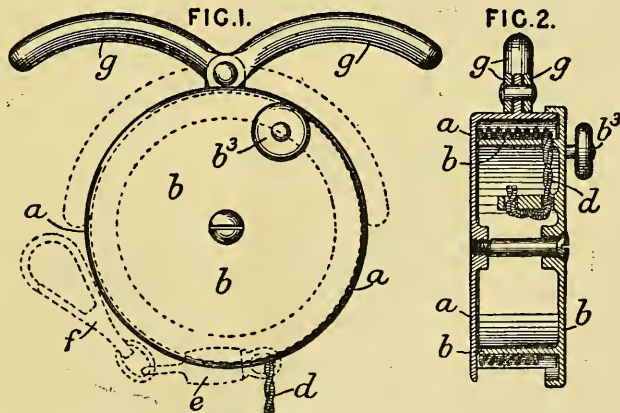
15,812.**16,381. Smith, T. A.** Aug. 4. *No Patent granted (Sealing fee not paid).*

Collars, neck.—

Rein rings are attached to metal hames by means of a screwed part d^2 on the ring d fitting into a screwed socket c cast in one piece with the metal hame and projecting therefrom; or the screwed pin may be cast with the hame and a socket provided on the rein ring.

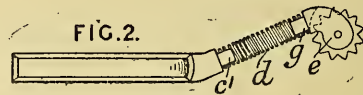
**17,004. Sydenham, G. W.** Aug. 13.

Dog leashes.—A dog leash of metallic or other cord is wound upon a rotary drum when not required, the drum having jointed arms which serve as a holder when the leash is in use. Fig. 1 shows the jointed arms g in use, in which position they are held by stops; when not required they are folded down into the dotted-line positions. The cord or leash d , with swivel e and snap-hook f attached, is secured to a rotating drum b provided with a handle b^3 , by means of which the leash is wound upon the drum inside the casing a .

**17,372. Dolletscheck, L.** Feb. 12, [date applied for under Section 91 of Patents &c. Act, 1907].

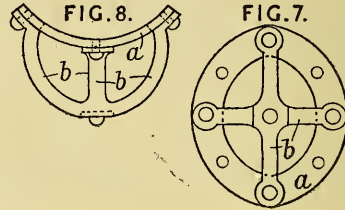
Spurs.—The rowel of a riding-spur is connected to the heel-piece by a neck formed of a helical or

blade spring. In Fig. 2 the neck *d* is shown formed of a helical spring connected to the socket-piece *c* of the heel-piece and to the socket-piece *g* of the sheave *e*. The device is applicable to both ordinary and folding spurs.

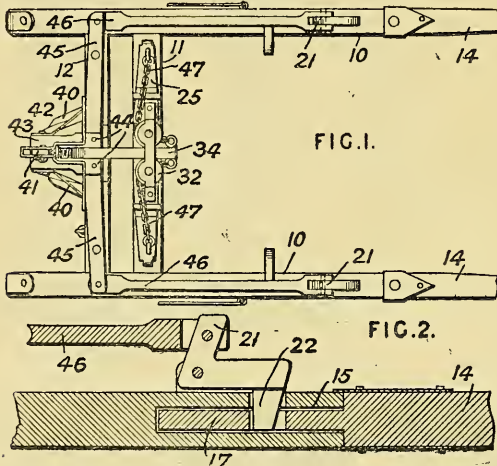


17,488. Parkes, T. W., and Parkes, J.,
[trading as Parkes & Co., T. W.]. Aug. 20.

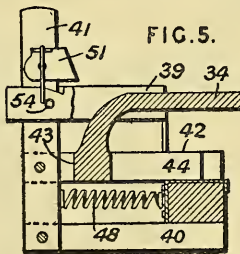
Bridles.—An eye-protector, principally for use on animals working in mines, comprises a metal ring *a* to which cross-bows *b* are riveted. The ring is curved and is riveted to the harness bunting cap or bridle.



17,685. Weyh, G. J. Aug. 22.



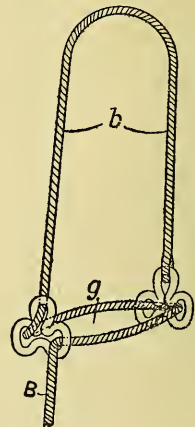
Runaway or restive horses, releasing.—A portion of the shafts of a vehicle and the harness traces are released simultaneously from the vehicle. The shafts 10, Fig. 1, have two cross-pieces 11, 12, and each shaft has a detachable portion 17, Fig. 2, fitting into a socket 15 in which it is held by a catch 22. The catch 22 is formed on a bell-crank lever 21 and can be withdrawn by means of a link 46 pivoted to a lever 45 on the cross-piece 12. The whipple-tree 25 is pivoted on the cross-piece 11 and has spring-pressed sliding bolts at each end which engage in ears attached to, but spaced from, the ends of the whipple-tree, to which bolts the traces are secured. The bolts are withdrawn, to release the traces, against the action of the springs, by chains 47



passing around pulleys 32 and secured to a sliding bar 34. The bar 34 is secured at its other end to the cross-bar of a double-forked member 42 having arms 43, 44. A lever 41 pivoted to a support 40, Fig. 5, on the cross-piece 12 is attached to the member 42, the arms 44 of which are connected to the levers 45, which are connected to the shaft-retaining-catches 21. A pawl 51 and a spring 48 retain the lever in its rearward position. When the pawl is disengaged and the lever pressed forwards, the shaft portions 14 are released together with the traces. A pin 54 can be placed in the guide 39 to retain the lever in its forward position. The pole of a vehicle may be similarly released together with the traces.

17,933. McNaught, R. Aug. 26.

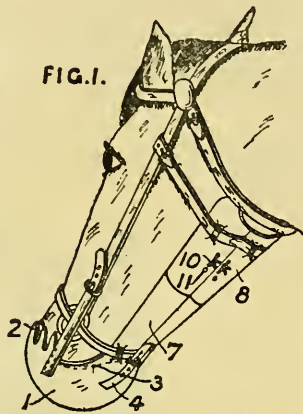
Halters.—A halter for horses, cows, and other animals, comprises a single length of rope with cheek-pieces made of wire or metal. The rope is secured to one cheek-piece and is arranged as shown to form the head-piece *b* and nose-piece *g* with a free end *B*. Modified forms of the cheek-pieces are described consisting of disks in which, besides the rope or strap slots, holes are provided for the attachment respectively of a strap or the connecting-link of a bit.



18,179. Willis, P. R. J., [Elliott, W. F.].
Aug. 29.

Clothing for animals.—An insect-shield for horses and other animals is made of leather or other flexible material and is secured to the animal by suitable straps. It consists of a bowl-shaped portion 1, with a serrated edge 2, attached by the straps 4. The bowl may terminate as indicated by the broken lines 3, or it may have a trough part 7 with an adjustable extension 8, the two parts being secured together by a lace 10 inserted through a series of eyes 11.

FIG. 1.



18,236. Goode, C. W. Aug. 31.

FIG. 1.

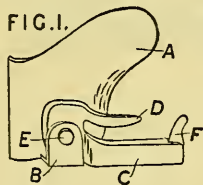
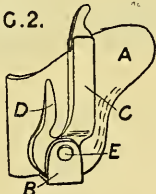
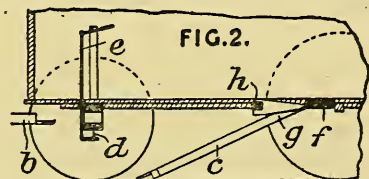
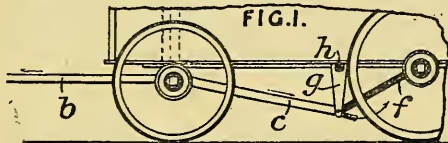


FIG. 2.



Stirrup straps, suspending.—A safety saddle bar is shown in the normal and release positions in Figs. 1 and 2 respectively. The base-plate A, thickened at the centre and tapered at the edges, is riveted to the saddle-tree and carries a bracket B. The cranked bar C is pivoted on a bolt E between the bracket B and base-plate A, and carries the usual spring-catch F. When the stirrup-strap is raised from its normal position, it engages the cranked projection D and turns the bar C to release the strap.

19,633. Quandt, T., and Wolff, W. Sept. 18.



Runaway or restive horses, releasing.—The horse

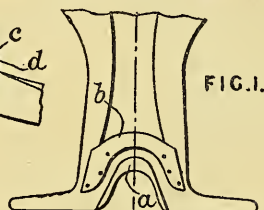
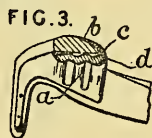
is released from a vehicle and at the same time brakes are applied to the wheels. In Fig. 1 is shown the draw-bar *b* and a longitudinal bar *c* both retained in place by a pin *d*, which can be withdrawn by a lever system *e* to release the pole *b* and bar *c* as shown in Fig. 2. The bar *c* is normally held against the tension of a spring *f*, which is connected also to the rear cross-beam and to a link *g* surrounding a revolvably-mounted square brake beam *h*. When the bar *c* is released, the spring rotates the link *g* and brake beam *h* so that the brake blocks are applied to the wheels.

19,771. Pennell, H. Cholmondeley-
Sept. 21.

Stirrups.—Riding-stirrups are made with the outside portion of the stirrup bow curved forwards as shown at A so that the rider's foot may not get jammed in the event of a fall.



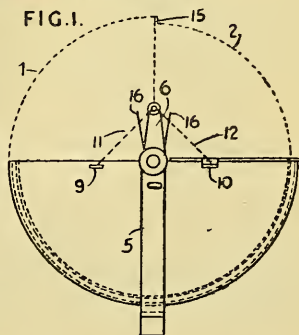
20,213. Beebe, J., and Beebe, B.
Sept. 25.



Saddles.—In order to strengthen saddle-trees, the gullet *a* and back or head plate *b* are fused together at their meeting edges *c, d* to form one piece, as shown in plan in Fig. 1 and in cross-section in Fig. 3. Specification No. 20,979, A.D. 1894, is referred to.

20,371. Erlebacher, J. Sept. 28.

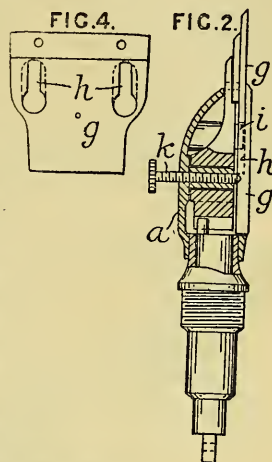
Catching animals, hand-poles and the like for.—A grasping or catching appliance, adapted to be operated from a distance by pulling a cord or the like and to be used for plucking fruit or flowers, catching fish, &c., consists of two symmetrical cup-like shells or frames which are mounted one within the other upon a handle and are rotatable around a common axis so that they may be swung in opposite directions to enclose or grasp an object. The shells 1, 2 are mounted on a fork 5 and are



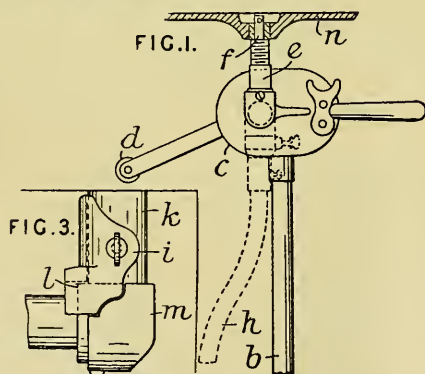
swung round into the positions indicated by dotted lines by means of cords 11, 12 attached to lugs 9, 10. The cords 11, 12 pass through guides in an arm 6 on the fork 5 and are connected to a single cord. The outer shell 1 is mounted in bearings in a fork 5 by means of straight or ball-shaped projections which act as bearings for studs on the inner shell 2. Half the inner shell is provided with a rim 15 to bear against the outer shell. The appliance may be weighted so as normally to swing open, or may be provided with springs 16 to engage the lugs 9, 10. The fork 5 may be mounted on a handle, and may be replaced by a bearing on one side only. The shells may be hemispherical, semi-ellipsoidal, semi-cylindrical, &c.

20,533. Kober, F. Sept. 30.

Horse-clippers and the like.—The comb plate *g*, Fig. 4, is detachably hinged by means of recesses *h* to two headed pins *i*, Fig. 2, extending downwards from the body *a*. Tension is applied through the lever action of the plate in the known manner by a screw *k*.



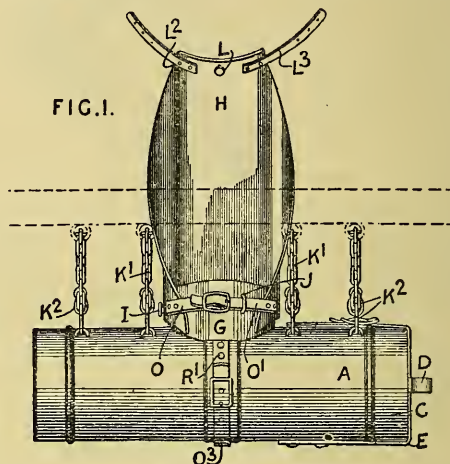
20,534. Kober, F. Sept. 30.



Horse-clippers and the like.—A shearing-machine of the type in which the shears are driven by a crank and flexible shaft, is arranged so that the flexible shaft may be removed and a grinding-disk mounted upon the end of the driven shaft. A crank *d*, Fig. 1, drives gearing in a box *c*, the driven shaft *f* being contained in hollow jointing-pieces *e*, *k*, Fig. 3, arranged at right-angles. The piece *e* can turn around the axis of the piece *k*, the joint being covered by a shield *m*. A clamp *i*, secured to the piece *k* by screws and having lips *l*

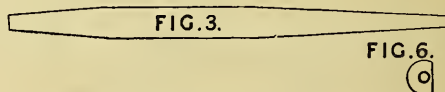
engaging the shield *m*, secures the piece *e* in position. When it is desired to use the sharpening-apparatus, the flexible shaft *h* is removed from the driven shaft *f* and the piece *e*, which is normally in the position shown in dotted lines, is turned and secured in a vertical position, and the grinding-disk *n* is secured on the end of the shaft *f*.

20,589. Hunt, W. H., and Hunt, C. E. Sept. 30.



Droppings, devices for catching.—A dung-catcher of cylindrical form, made of metal, is adjustably and flexibly carried from the vehicle and is connected by a leather shoot to the breeching of the animal. The receptacle *A* has one or both ends detachable, one end *C* being provided with a handle *D*. The end *C* is maintained in place by a strap *E*. At the centre of the receptacle an opening is provided surrounded by a flange *G* round which is fitted the lower end of the flexible shoot *H*. The shoot is connected to the flange by a stud *I* on the flange, which is passed through a button-hole in the shoot and by straps *O*, *O1* which pass under the eyelet *J*. A strap *O2*, also connected to the bottom of the lower end of the shoot, is passed under the receptacle and buckled to the fixed strap *R1*. A stud on the breeching is passed through a hole *L* in the upper part of the shoot, which is further connected to the breeching by straps *L2*, *L3*. The receptacle is supported from the vehicle by double chains &c. *K1* having snap hooks *K2*, by which means the lengths of the suspending-devices can be altered.

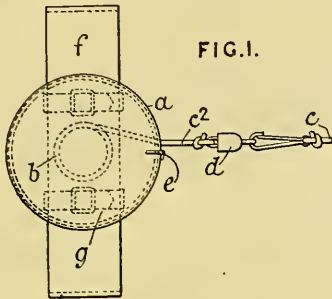
21,122. Parkes, J., and Parkes, T. W., [trading as Parkes & Co., T. W.]. Oct. 7.



Collars, neck.—In the production of hames that are strongest at the draught, as in cased hames, metal tubes are tapered as shown in Fig. 3 by

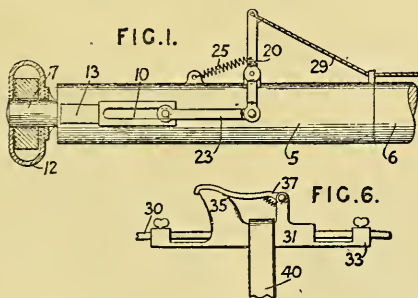
tapering-rolls, are then made of D-section as shown in Fig. 6 by passing between a U-sectioned and a flat roll, and finally are bent by a press or stamp.

21,147. Kemble, R. W. Oct. 7.



Dog leashes.—A dog leash is adapted to be wound by spring or hand upon a drum in a circular casing secured to the collar or harness of the animal. The leash is in two parts c, c^2 , with a stop-piece d attached to one end of the short part c^2 , the other end of which is secured to the spring or hand rotated drum b . When the leash is extended, the rounded stop d presses down a spring catch e which prevents the piece d from returning into the casing a until the catch is depressed by hand. Straps g attached to the casing a serve to fix it to, say, a collar f , or clips may be used. A ring or loop is provided at the free end of the leash; and the flat face of the casing, which is preferably made of thin metal, may serve as a label.

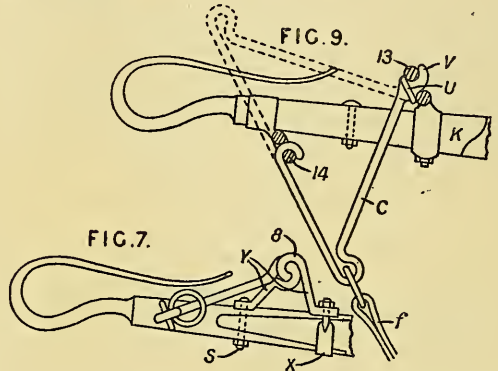
21,594. Tremaine, W. E. Oct. 12.



Runaway horses, releasing.—Horses are released from vehicles by slipping the tugs or traces from the ends of the whipple-trees, and by the use of a slip device whereby the back strap is detached from the breeching. At both ends of the whipple-tree 6 a socket 5 is fitted, formed with a pin 7, which passes through the trace which is held on the pin by a collar 12, provided with arms 13. The arms 13 slide in guides 10 and are moved by links 23 connected to a rock-lever 20. Normally, the collar 12 maintains the trace in position on the pin 7; but

when a flexible connexion 29 is raised, the rock lever 20 is tilted against the action of the spring 25 and the trace is released from either end of the whipple-tree. To enable the back strap 30 to be released from the breeching when the traces are disconnected a housing 31 is attached to the back strap by means of screws and loops 33. The housing carries the hip strap 40, and when a horse runs away the strap 40 slides over the curved lug 35 and raises the spring catch 37, thus freeing the back strap from the hip strap.

21,611. Brigg, T. H. Oct. 13.



Fastening; yokes, neck.—Pole-end attachments for carriages, omnibuses, sleighs, limbers, and other horse-drawn vehicles of the kind described in Specifications No. 18,666, A.D. 1899, No. 22,983, A.D. 1900, and No. 19,334, A.D. 1903, are made self-contained and may be made readily removable. To the upper and lower sides of a tapered or parallel tube K, Fig. 9, are brazed or otherwise secured eyelets 13, 14, to which are pivoted triangular arms C connected to the kidney links by chains or straps f . The front bars of the arms C may be replaced by chains. The arms C may have hook connexions with the eyelets 13 or they may have collars U bearing against the eyelets and held in place by a finger hook V. The eyelets 14 may be of leather. The tube K may have a longitudinal indentation engaging a groove on the pole. Fig. 7 shows an ordinary pole end with a bracket Y brazed to it carrying eyelets 8, the device being secured to the pole by a bolt S and clip X.

21,764. Hughes, J. W. Oct. 14.



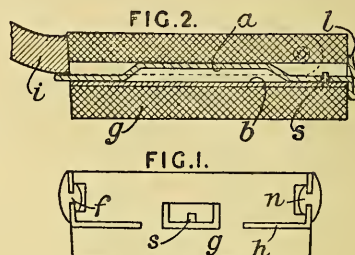
Runaway horses, releasing.—The shafts of a vehicle can be released by means of a device, which is detachably connected to the front axle and can be adjusted to support shafts of different sizes.

The shaft support 1 is formed of a number of threaded tubes, so that its length may be altered by screwing or unscrewing the various sections. The support is carried from the front axle by detachable brackets, and has spring-pressed pins 19 at each end

which take into eyes E' on the ends of the shafts. To release the shafts, the pins 19 are withdrawn against the action of the springs 25 by flexible connexions 22 working on pulleys 23 and actuated by a hand-lever on the vehicle.

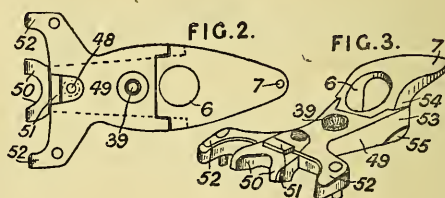
22,034. Römer, H. Oct. 17, 1907, [date applied for under Section 91 of Patents &c. Act, 1907].

Spur-carriers.—Spurs are attached to boots by means of inwardly-directed pins which engage in heel slots, and by means of a slide-piece inserted into the heel. The front part of the heel *g*, shown in Fig. 1, has, at each side, a small angular plate *h* having a slot *f* to receive the pins *n* secured to the spur. A channel *b* extends through the heel, Fig. 2, and receives a curved elastic slide-piece *a*, which thrusts the spur *i* up at the rear end, and has its front end *l* bent so that it prevents the entrance of mud into the channel. A pin *s* in the channel *b* passes through a hole in the slide-piece *a* in order to retain it in position.



22,108. Silver, W. Jan. 9, [date applied for under Section 91 of Patents &c. Act, 1907].

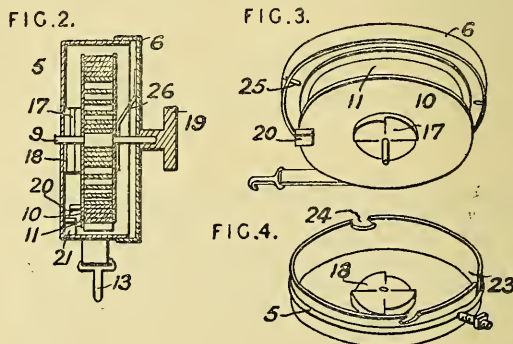
Horse-clippers and the like.—The tension-distributing means described in Specification No. 5735, A.D. 1907, as for three-point cutters is now applied to clippers in which pressure is conveyed to the cutter at four points. The lever shown in Figs. 2 and 3 is pivoted at its rear end 7 and operated by a slide in the vertical jaw 6. Its fore end terminates in two pressure-fingers 50, the outer fingers 52 being carried by a riding-fork 49 to which pressure is applied from the outer casing through the cup 39. The riding fork has two projections 53, which are caught in recesses between the ears 54, 55 in the lever; and it is held in position by the stub-piece 51 on the lever in relation to which it is vertically adjustable by a



screw 48. In a modification, the lever terminates in the outer fingers, the two central ones being carried by an elastic T-plate riveted, it may be loosely, to the underside of the lever.

22,225. Grant, B. J. Oct. 22, 1907, [date applied for under Section 91 of Patents &c. Act, 1907].

Bridles, check-reins for. A harness check-rein has one end secured to the bridle and the other end detachably connected to a strap wound on a spring-actuated drum, mounted preferably on the saddle. The drum 10 is loosely mounted on a spindle 9 in a circular casing composed of two parts 5, 6. The section 5 has bayonet-slots 24, in which pins 25 on the section 6 engage, to hold the parts of the casing together. A ratchet-clutch member 17 is fixed to the spindle 9 and a second member 18 is fixed to the casing 5, the two parts being held in contact by a leaf spring 26 fixed to the casing 6. A coiled spring 11 is secured to the spindle 9 at one end and to the drum 10 at the other end. The drum 10 has a lug 20 which contacts with a lug 21 on the casing and limits the rotation of the drum. The strap passes through a slot 23 in the casing, and is secured to the check-rein by a hook 13. The spring 11 can be adjusted in tension by winding the spindle 9, which is then

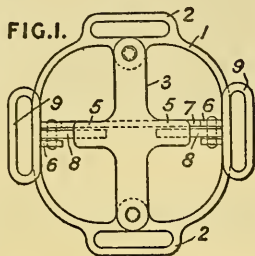


retained in position by the clutch. A finger-piece 19 is fixed to the shaft 9 to facilitate turning.

22,545. Meinhardt, A. B. Oct. 23.

Fastening.—A device for holding the ends of traces and preventing them from dragging over the ground comprises a ring 1, Fig. 1, having loops 2 for connecting it to the harness. A strip 3 of metal, having lateral extensions 5, is riveted to the ring, and, beneath the extensions 5, are pivoted in lugs 6 two dogs 8 provided with loops 9.

One or both of the lugs 6 may take the form of a bar 7 extending across the ring to strengthen it. The looped end of the trace is held up by passing it round one of the dogs 8.



by metal strips 2, 3, and carries wooden blocks 6 to which the cover 7 is attached. Eyes can be fixed to the wooden blocks so that the two ends of the collar can be drawn together by means of a cord.

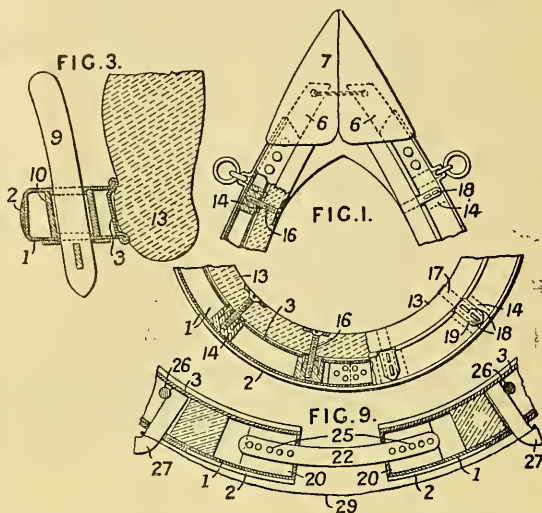
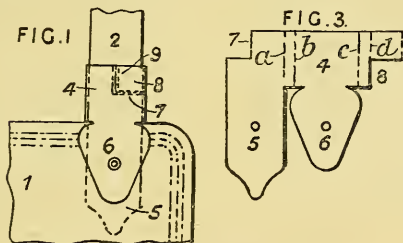


Fig. 3 shows the method of attaching the draught hooks 9 to the frame. Into the frame 1 are inserted inclined tubes 10 into which the ends of the hooks fit. The padding 13 can be attached to the frame by means of screws 16 fitting into wooden blocks 14 secured to the frame, as shown in the left-hand half of Fig. 1. On the right-hand half of Fig. 1 the padding is shown attached to the frame by means of straps 17 fastened to the frame by nails 18. A protecting plate 19 may be used to cover the ends of the straps. The frame can be made in two parts, in which case the lower ends are stiffened by metal insertions 20. The two parts are adjustably connected by means of a curved bar 22 with a number of holes at each end; pins 25 are passed through the bar and frames. To draw the two ends together, a pin 26 is inserted in each end of the frame to serve as a fulcrum for a hook 27. The two hooks can be drawn together by tightening a connecting-rope 29.

22,547. Schaaf, J. H. Oct. 24, 1907, [date applied for under Section 91 of Patents &c. Act, 1907].

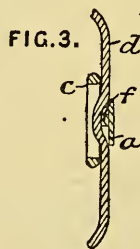
Bridles; fastening.—The supporting-strap of a blinker is connected to the blinker by means of a clip of special form, which is stamped from sheet metal. The metal blank shown in Fig. 3 has a rectangular base 4, formed with a notch 7, a tongue 8 with a tooth 9, and two tongues 5, 6. The base 4 is folded around the strap 2 as shown by the dotted lines *a*, *b*, *c*, *d*, and the tooth 9 is driven into the strap to hold the clip in position. The blinker 1 is placed between the tongues 5, 6, which are riveted to it. In a modified form of clip, for use with round straps, the notch 7 and tongue 8 are omitted, the clip being attached to the strap by rivets. The tongues 5, 6 may be ornamented.

22,610. Nejedlo, F. J., and Pavlista, F. J. Oct. 24.

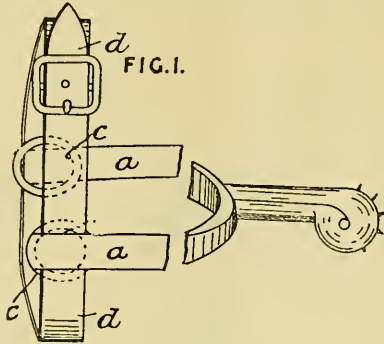
Collars, neck.—A collar for draught animals comprises a frame consisting of one or more strips of U-shaped iron to which the padding is attached by straps or screws. The iron frame 1 is strengthened

22,956. Hill, T. W. Oct. 28.

*Spurs, of the type in which the attaching-strap does not pass over the outsides of the spur-fork, are provided with special means for gripping the strap. At the ends of the fork-arms *a*, loops *c* are formed on the insides of the arms, and the strap *d* is passed down through slots between the loops and the arms. The strap may be held by means of a fixed or pivoted bar *f* on each arm *a*; or a spring catch may be used. In a modification, the*



strap is slipped in sideways, the arm *a* being slit for this purpose, and the strap may be held in position by the spring action of the extremities of

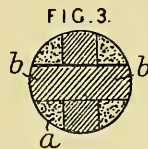


the arm, or by being passed over a stud projecting inwardly from the arm *a*. The inside face of one arm of the spur is inclined to the vertical plane to allow for the curve of the boot.

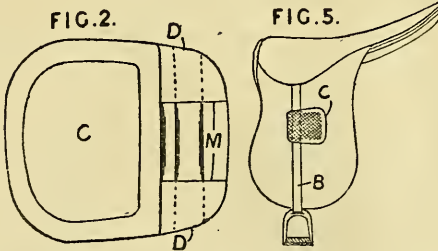
23,331. Neuhaus, A. O. Nov. 2.

Whips.—Whip-handles are made by slitting the end of the reed *a* which forms the whip and inserting a cone *b* of suitable dimensions made of cardboard, papier mâché, &c. and glued or otherwise fixed to the reed.

[Reference has been directed under Section 7 of Patents &c. Act, 1907, to Specifications No. 1600, A.D. 1862, [*Abridgment Class Umbrellas &c.*], and No. 1526, A.D. 1880.]



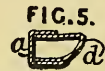
23,513. Hill, T. W., and Swales, F. Nov. 3.



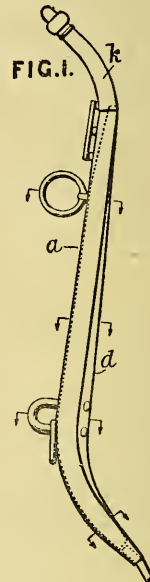
Saddles.—A knee-grip for riders is adjustably secured to the stirrup leather. The grip is in the form of a rubber or like pad *C* with a roughened outer surface, and the portions of the pad on each side of the strap *B* are connected together by a tubular loop *D* formed in two parts with a space between the tubes terminating at *M*. The portion of the stirrup leather between the tubes *D* may be

covered or uncovered by the flap. The strap is passed through the loops. In a modification, the tube may be in one piece with a slit down the rear, the two edges thus formed being fastened together by lacing. The underside of the rear part of the pad may be domed to form an air-cushion, or an air-cushion may be enclosed in that part of the pad.

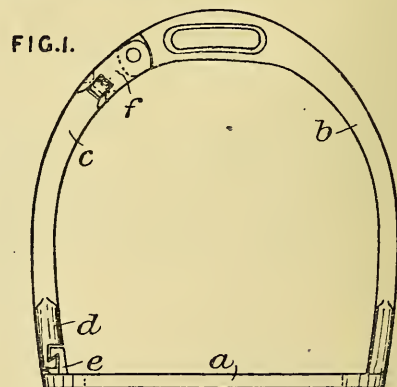
24,746. Kilburn, B. E. D., [Cameron, C. E.] Nov. 17.



Collars, neck.—Hames are formed by fitting together two U-shaped metal troughs. In a hames of the Scotch type, Fig. 1, the main trough or shell *a* receives the filler shell *d*, the two being secured together by the shanks of the draught fittings which form rivets. At the lower end of the hames, the sides of the main shell *a* overlap and enclose the filler shell, and a cap *k* encloses the upper end.



25,814. Porter, R. B. Nov. 30.



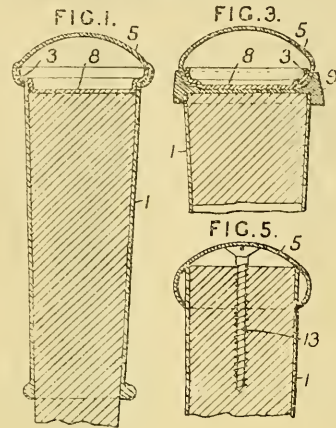
Stirrups.—One part of the bow of a safety stirrup is fixed to the foot-plate, while the rest of the bow is adapted to swing in two directions at right-angles to each other. The free part *c* of the

bow is connected to the fixed part *b* by a short link *f*, pivoted to the parts *b*, *c* by pivots at right-angles to each other. The part *c* terminates in a recessed enlargement *d*, which engages with a catch *e* fixed to the foot-plate *a*. The parts *d*, *e* become separated if the rider is thrown, and so release his foot. In the Provisional Specification, the fixed and free parts of the stirrup bow are stated to be connected together by a cup-and-ball joint.

26,234. Gaunt, C. F. Dec. 4.

Whips.—The stamped sheet-metal caps or mounts of whips &c. are made separate from the ferrule, and are adapted to be fixed to the ferrule after it has been fixed to the whip &c. The rim of the cap 5 may be closed around a flange 3, which preferably consists of a dished disk 8 attached to the ferrule 1. In a modification, Fig. 3, the ferrule is provided with an ornamental ring 9. Fig. 5

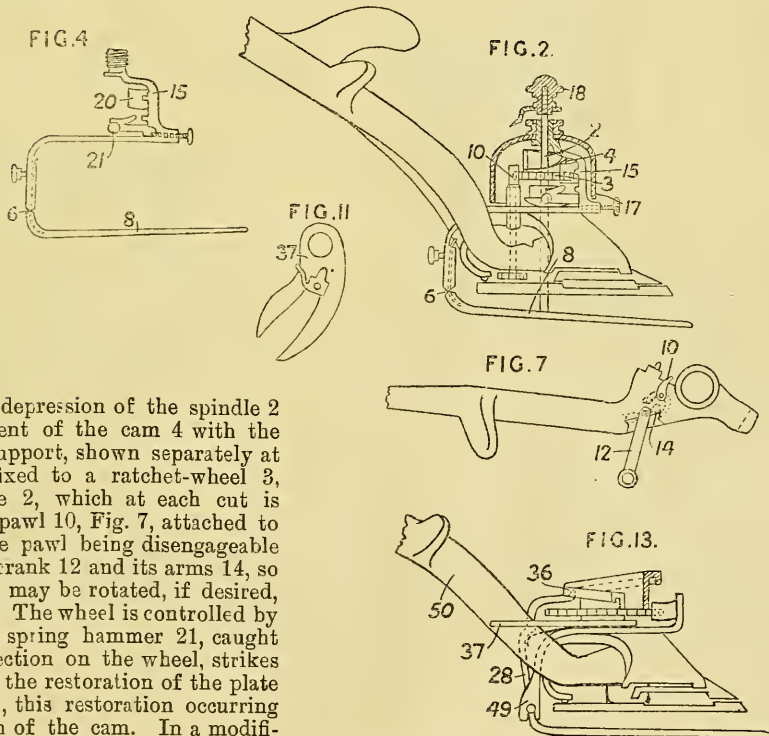
shows a form in which the cap is attached by means of a central screw or spike 13.



26,491. Hellstrom, K. A. Dec. 7.

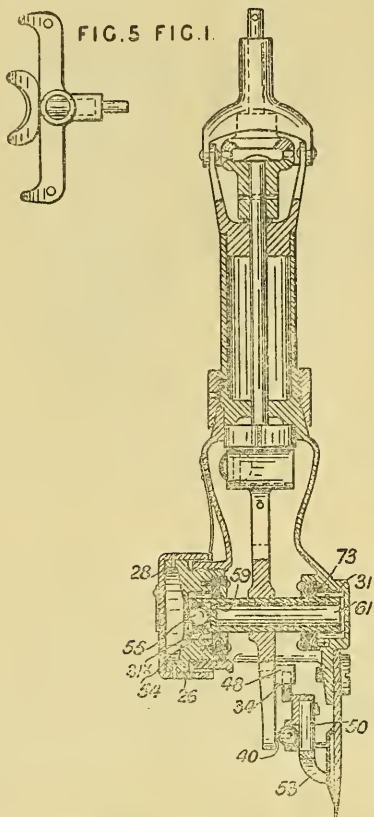
Horse-clippers and the like.—

Relates to means for automatically regulating the closeness of the cut, and consists in the provision of a cam which projects the regulating comb-plate relatively to the cutters. Fig. 2 shows sectionally one form in which the regulating-plate 8 is projected against the action of the spring 6 by the depression of the spindle 2 owing to the engagement of the cam 4 with the arm 15 of the central support, shown separately at Fig. 4. The cam is fixed to a ratchet-wheel 3, attached to the spindle 2, which at each cut is rotated one step by a pawl 10, Fig. 7, attached to the movable handle, the pawl being disengageable from the wheel by the crank 12 and its arms 14, so that the ratchet spindle may be rotated, if desired, by the head 18, Fig. 2. The wheel is controlled by a spring 20, Fig. 4. A spring hammer 21, caught and released by a projection on the wheel, strikes the bell 17 just prior to the restoration of the plate to its original position, this restoration occurring once for each revolution of the cam. In a modification, stated to be applicable to existing forms of clippers, the comb-plate is pivoted to a projecting arm 49, Fig. 13, and is operated by means of a backwardly extending arm 28. The engaging cams may be of various forms to agree with the arc of travel of the end 36 of the arm 28, which may be jointed to accommodate itself to a cam of unvarying height. The motion of the handle 50 is transmitted through a fork 37, shown in plan in Fig. 11,



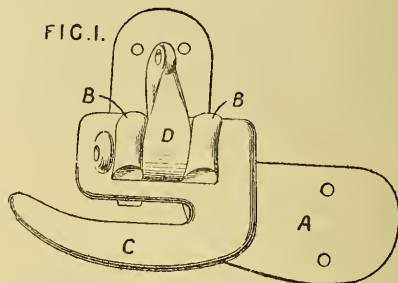
which is loosely mounted on the central pivot and carries an upstanding pawl engaging with the ratchet-wheel. A projection on the upper face of the ratchet-wheel, or a plain portion in the periphery, may be provided to disengage the pawl automatically or to render it inoperative.

27,154. Cahill, W. M. Dec. 14. *No Patent granted (Sealing fee not paid).*



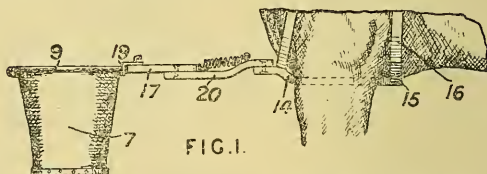
Horse-clippers.—Relates to clippers having a two-armed vibrator rigidly fixed to a vertical hollow shaft capable of longitudinal adjustment, and consists in means for mounting and adjusting the vibrator shaft. The shaft 61 is mounted in roller bearings 31, 31 \times , and is subject to end pressure by means of a cap 26 and a ball 55 working in a pocket 54. A cover 28 is attached to the cap through which the shaft is lubricated, the oil reaching the lower bearing through the hole 59 and being prevented from leaking by the packing 73. The tension-distributor is shown separately in Fig. 5. It is suspended in the removable stud 48, and the operating-ball 40 engages with the central shaft 50 of the inner fingers 53.

27,696. Bolt, J. Dec. 21.



Stirrup straps, suspending.—A safety saddle-bar comprises a bottom-plate A having two fixed lugs B, between which is pivoted a hook D. Normally the loose stirrup-leather hook C rests on the lugs B, and is maintained in position by the hook D. In the event of the rider being thrown the hook D is turned down so that the hook C becomes detached. The lugs B are so shaped that they prevent any lateral or upward movement of the hook C.

28,531. Snyder, J. C. Dec. 31.



Nosebags.—A collapsible nosebag is arranged to be attached to a support comprising several rods hinged together, one of which is strapped to the animal. The bag 7 has an upper rim 9 in two parts, hinged together so that the mouth of the bag can be closed, and a member 19 is carried by the rim 9 and has a slot for attachment to a hook on the supporting-bar 17. The bar comprises three sections 17, 20, 14, and the section 17 is held in alignment with the section 20 by means of a spring. The section 14 carries a curved element 15, to which straps 16 are secured for supporting the bars between the fore-legs of the animal. When the bag is detached, the bars can be folded together.

A P P E N D I X.

The following abridgment should be added to those appearing in the volume of this Class for the period A.D. 1893-6.

A.D. 1896.

7896. Bill, F. M., and Sloss, J. L. April 14.

Horse-clippers and the like.—A platinum wire rod or the like *k*, adapted to be heated by an electric current, is mounted adjustably on a comb by means of the studs *d*, *u* and spring *j*. The studs are insulated from the comb, the stud *d* being connected to the conductor *b*, and the stud *u* to the conductor *b'*, through a push-contact *q*, by which the circuit may be completed at will.

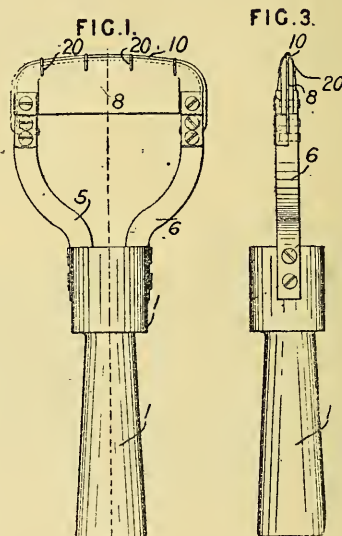


The following abridgment should be added to those appearing in the volume of this Class for the period A.D. 1897-1900.

A.D. 1898.

**26,576. Johnson, S. L., Johnson, E.,
Brooksbank, J., and Gibbings, A. H.**
Dec. 16.

Horse-clippers and the like.—Relates to a too for removing wool or hair from skins without injury. An electric current is conveyed by flexible wires to two conductors passing through the insulating-handle 1 and connected to metal branches 5, 6 joined by a platinum wire 10 bound by wires 20 to the edge of a plate 8 of ganister. The wire 10 is raised to a white heat by the passage of the current, and is passed over the skins, severing the hair at the roots. The Provisional Specification states that a wire sheath or guard heated by a series of oxyhydrogen jets may be employed.

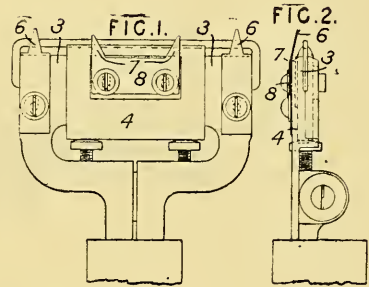


The following abridgment should be added to those appearing in the volume of this Class for the period A.D. 1901-4.

A.D. 1904.

21,363. Wimbles, I. Oct. 5.

Horse-clippers and the like.—To prevent the apparatus described in Specification No. 26,576, A.D. 1898, for removing hair, from burning the skins &c., curved metal guards 6, 7 are provided. The guards 6 are adjustably mounted on the arms 3, while the guards 7 are carried by a plate 8 secured to the insulating-material 4.



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